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ABSTRACT

Questions relating to knowledge of basic health concerns were the foundation of a survey of two groups of individuals: 17-year-old school students and adults between the ages of 26 and 35. The questions were grouped into two general categories--accident prevention and emergency care skills, and good health practices. Each of these topics contained subsets on pertinent facts selected as important for a sound knowledge base on health. For data analysis purposes, respondents were divided into the following groups: (1) sex; (2) race; (3) geographic region; (4) grade level in school; (5) health-related job experience; (6) health-related formal education; (7) total household income; and (8) size of community. Results of the survey are presented in the form of graphs dealing with each subset. Short summaries of important findings are highlighted in italics at the beginning of chapters or sections. (JD)

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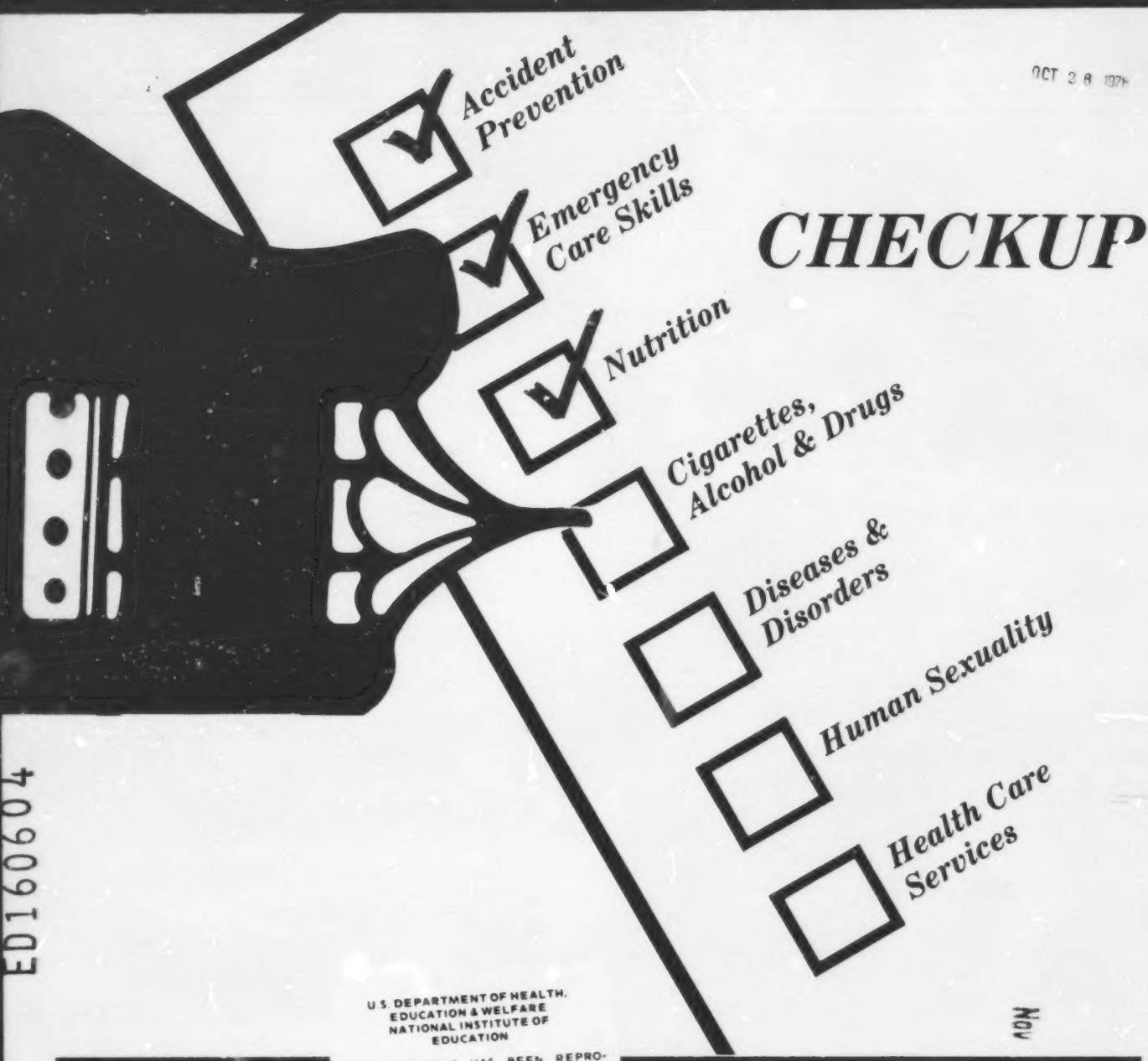

CHECKUP

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The cost figure cited above represents the total amount of money expended since late 1973 on assessments in art, career and occupational development, reading, writing, social studies/citizenship, science, basic life skills, mathematics and consumerism, resulting, to date, in numerous reports, papers, articles, presentations and assessment materials, many of which are used in state and local assessment programs. A complete list of all such materials is available upon request.

CHECKUP

A National Assessment of Health Awareness Among 17-Year-Olds and Young Adults

Report No. 08-H-01

by the
National Assessment of Educational Progress

Education Commission of the States
Suite 700, 1860 Lincoln Street
Denver, Colorado 80295

September 1978

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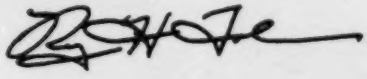


Roy H. Forbes
Director

INTRODUCTION

Developmental History

Over the past nine years, the National Assessment of Educational Progress (NAEP) has gathered and reported information, through yearly census-like surveys, on the knowledge, skills and attitudes of American 9-year-olds, 13-year-olds, 17-year-olds and young adults, ages 26 to 35. Currently, 10 basic learning areas are assessed: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing.

Although a health assessment was not one of the original assessment areas, its development was in agreement with National Assessment's goal to provide the public with information about education concerns relevant to contemporary social issues. In keeping with that goal, NAEP initiated a limited assessment of basic life skills beginning in 1975. The health assessment is a product of that effort.

During 1975, National Assessment consulted with many individuals who have expertise in disciplines related to basic life skills. These individuals assisted the NAEP staff in establishing areas that represent a core of basic life skills that young Americans should have. Health maintenance skills were among those identified as critical for survival.

Once the health skills area was identified, guidelines were established to assist in the development of questions related to basic health concerns. As questions were developed, they were reviewed by medical, social service and health experts around the country.[1] These reviews served as forums for the clarification of the content of the health assessment itself.

[1] See Appendix A for a list of the consultants who participated in various developmental phases of the health assessment.

Administration

Because of limited financial resources, the health assessment was administered at only two age levels; the content of the area suggested that one group of participants should be 17-year-olds attending school and another should be adults between the ages of 26 and 35. In order to assess these populations, National Assessment drew a national probability sample of approximately 1,300 respondents for each question at each age level. The sample was stratified by region and community size.

The test-administration procedure for 17-year-olds and adults differed in the following ways:

- The assessment of adults was administered to individuals by a trained interviewer. Each adult participant was given a test booklet and a background questionnaire related to education, job-related experiences, income levels and so forth. Each respondent read the questions and recorded his or her answers in the appropriate booklet. While the estimated completion time for the test booklet was set at 45 minutes, respondents were asked to work until they had completed all the questions. Respondents who completed the assessment were compensated for their time.

- The assessment of 17-year-olds was one

part of a total basic-life-skills assessment that included health questions among others. There were six basic-life-skills test booklets, each containing some health questions. Each 17-year-old respondent was asked to answer the questions within only one booklet. Answers were recorded on a separate answer sheet. Although individual questions in the test booklets were not timed, the total administration time was fixed at approximately 45 minutes. The exact time depended on the particular test booklet being administered. As a result of the fixed time period and the nonpaced format for individual questions, there was a high nonresponse level for certain items. Many of the respondents did not answer the questions toward the end of the booklets. Results are not reported for exercises to which more than 10% of the students did not respond.

Reporting the Results

The emphasis throughout most of this report is on the results for individual questions. The questions have been grouped into two general categories: (1) accident prevention and emergency care skills and (2) practicing good health. Each of these has been further subdivided into meaningful subsets of questions on various topics that fall within these two broad divisions. Results for 229 questions asked of adults and 196 questions asked of 17-year-olds are reported here. One hundred sixty-seven identical questions are reported for both 17-year-olds and young adults. The results on these questions are compared throughout the report.[2]

Chapter 1 summarizes the achievements of 17-year-olds and young adults. The data represent mean percentages of respondents who correctly answered a composite of health questions. In addition to presenting national results at ages 17 and 26 to 35, this report also presents achievement data for various groups of people. Adult performance is examined by region, sex, race, level of education, total household income and health-related training and/or job experience. At age 17, performance is examined by sex, race, region and grade level in school. Group results on specific questions are discussed when the results appear to be significantly higher or lower than usual, or seem socially noteworthy. In addition, selected characteristics of the sample are defined in this chapter.

The data in Chapters 2 and 3 are estimates of the percentages of individuals in a given group who could answer specific questions correctly. For example, when we say that "85% of the adults gave a correct response," we mean that 85% is an estimate of the proportion of all adults ages 26 to 35 in the country who could have answered correctly, based upon the weighted performance of our sample group. As in any sampling survey work, the percentage estimates are subject to sampling error because observations are made only on a sample, not on the entire population. Additionally, all the achievement data in this report are rounded up or down to the nearest percent, e.g., 84.2% is shown as 84%; 84.7%, as 85%.

National Assessment does not make interpretive comments about the data it collects. We rely upon outside experts in the field to comment upon the data found in our reports. Chapter 4, "A Perspective on the Data," is the result of an interpretive conference that was held to discuss the health assessment. It reflects the views of four experts in the health field about the implications of these data for the health care and health education communities.

At the beginning of a chapter or section, selected findings might be highlighted in italics. These highlights, representing short summaries of important findings, were selected by the four health consultants as especially noteworthy.

[2] See Appendix B for a complete index of the health questions found in this report.

Reporting Groups Defined

National Assessment, unlike most testing programs, does not report scores for individuals.[3] Rather, NAEP reports how defined *groups* of people respond to certain questions. Definitions of the groups discussed in this report are presented below.

Sex

Results are presented for males and females.

Race

Results are presented for blacks, whites and others.

Region

The country has been divided into four regions — Northeast, Southeast, Central and West. States included in each region are shown on the following map.

[3] More detailed information on the methodology employed by National Assessment can be found in the *General Information Yearbook*, Report 03/04-GIY, 1971–72 and 1972–73 Assessments (Denver, Colo.: National Assessment of Educational Progress, 1974). Specific chapters on sampling, objectives and exercise development, administration, data processing and analysis procedures can be found in this volume.

Grade Level in School

Results are presented for those 17-year-olds who are below the 10th grade, and those in the 10th, 11th and 12th grades.

Health-Related Job Experience

Adults were asked whether or not they had any job-related experience in medicine or health services beyond high school.

Health-Related Formal Education

Adults were asked how much formal educational training beyond high school they had in medicine or health services.

Total Household Income

Adults were asked how much total household income they had in 1976 before taxes and deductions.

Size of Community

Big city. Students in this group attend schools within the city limits of cities with a population over 200,000.

Fringes around big cities. Students in this group attend schools within metropolitan areas served by cities with a population greater than 200,000 but outside the city limits.

Medium city. Students in this group attend schools in cities having a population between 25,000 and 200,000 not classified in the fringes-around-big-cities category.

Smaller places. Students in this group attend schools in communities having a population less than 25,000 not classified in the fringes-around-big-cities category.

CHAPTER 1

SUMMARY OF THE RESULTS

Results of the health assessment indicate that large percentages of 17-year-olds and young adults can answer questions related to basic health issues.[1] On the average, seven out of ten 17-year-olds and eight out of ten adults correctly answered questions given at their respective age levels. On identical questions asked at both ages, adults' performance was consistently higher than that of 17-year-olds. The mean percentage of adults who responded correctly to these questions was 12 points higher than the percentage of 17-year-olds.

The achievement levels for the groups reported here generally varied from 1 to 4 percentage points from the national mean. However, some notably larger differences in performance did occur. A comparison of the performance of selected groups is shown in Exhibits 1 and 2. On these exhibits, each bar represents the mean achievement of a group on a composite of items asked at that age level. The smaller bars within each bar extend two standard errors above and below the group mean.[2] The horizontal line across each graph represents the mean achievement of the total age population described in the study.

Perhaps the most noteworthy aspect of the group results found in Exhibits 1 and 2 is the consistency in the performance levels among the groups. Overall, the actual differences in performance between most groups at a given age become insignificant when the variability due to sampling and the generally high performance are taken into account. The small advantage of females over males at age 17 virtually disappears by ages 26 to 35. Regional differences are not remarkable at either age level. Among adults, education and income differences are not particularly noteworthy except at the extremes.

Nevertheless, some notable differences in performance levels do exist. The percentages of correct responses of those 17-year-olds in the 10th grade or below, or who were not white, were substantially lower than those of other groups at their age level. Among adults, the mean performance of those who reported that they had not graduated from high school or who were not white was also below the adult national mean. The gap notwithstanding, approximately 7 out of 10 adult respondents in these groups answered the questions correctly.

Education, experience on the job and income all seem to be positively related to achievement on the health assessment.[3] More education, more health-related job ex-

[1] See Chapter 4 for an interpretation of the high-performance levels.

[2] A standard error of the sample mean is an estimate of the sampling variation among the means of all possible samples; it is used to estimate the precision of the mean obtained in a particular sample. Intervals of two standard errors below to two standard errors above a particular statistic would include the average of the statistic in approximately 95% of all possible samples. A particular interval computed in this way is called a 95% confidence interval. For example, the mean achievement of 17-year-olds in the Northeast is 69.8%. Two standard errors of this mean equals 1.6 percentage points. A 95% confidence interval for this group would include 69.8% ±1.6, or a range from 68.2% to 71.4%. We are confident that in at least 95 out of 100 possible samples, the percentage of success would be between 68.2 and 71.4%.

[3] See Appendix C for the percentages of the adult health sample who responded that they had some health training or job experience beyond high school.

EXHIBIT 1. Mean Percentages of 17-Year-Olds Correctly Responding to Health Questions

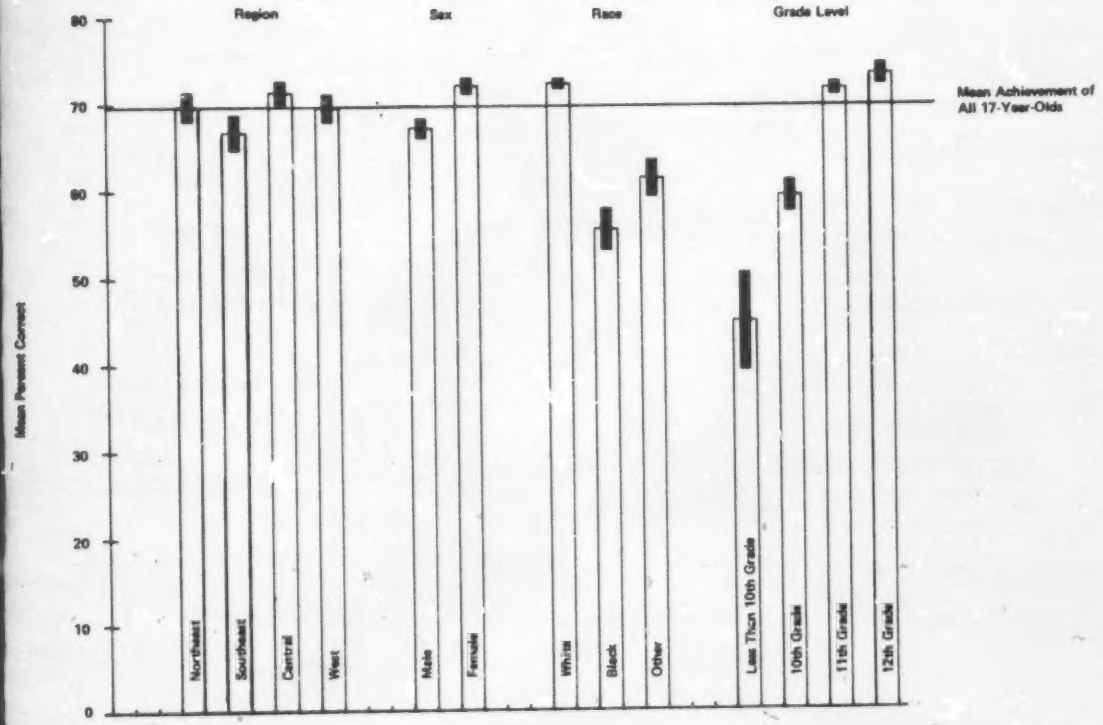
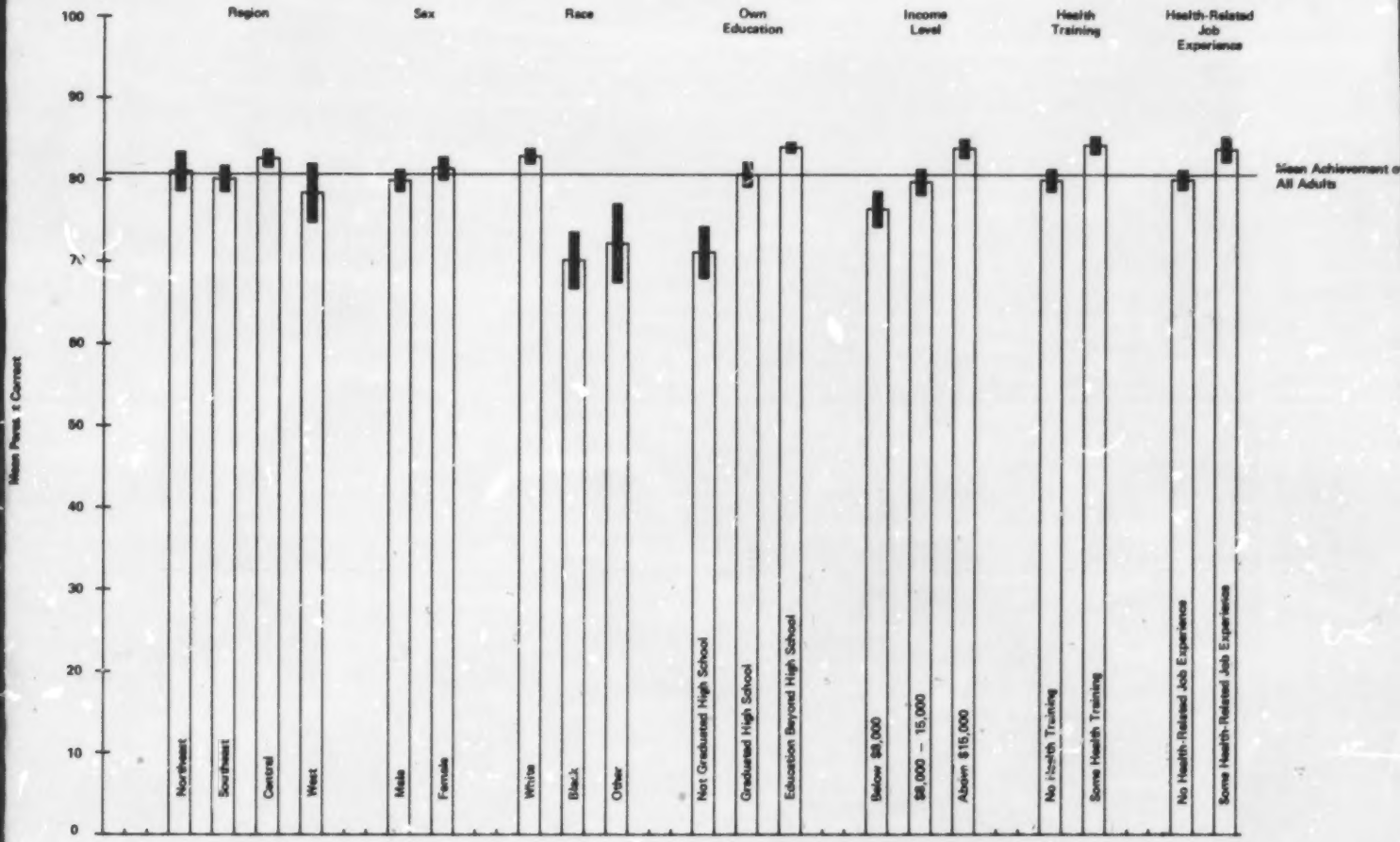


EXHIBIT 2. Mean Percentages of Adults Correctly Responding to Health Questions



perience and higher total family income are each related to a higher percentage of correct responses on the health items. The performance of 17-year-olds increases with each successive grade level of schooling. The most dramatic shift occurs between grades 10 and 11. Among adults, higher performance is consistently related to more education, whether that education is specifically health-related or general in nature. While the most notable differences occur at the extremes of the spectrum — between adults who reported they did not graduate from high school and those who reported some education beyond high school, or those with incomes under $8,000 or over $15,000 — the patterns are consistent throughout.

Although these differences point to areas of critical concern, readers are cautioned not to ascribe these differences in achievement levels solely to membership in the particular groups designated by the labels. For example, since income and education levels are related to achievement levels and a disproportionate number of people in minority groups tend to have lower incomes and lower levels of education, income and education levels are related to the performance of minority group members on achievement tests. The tables and exhibits that follow describe selected characteristics of the National Assessment sample and point out some of the interrelationships between variables. Table 1 shows the percentages of adults representing the various groups identified in the adult sample. Tables 2 and 3 provide information about the racial/ethnic mix within various income- or education-level categories discussed in this report. Table 4 shows the relationship of education and income within the sample. Exhibits 3 and 4 provide the percentages of the samples of black and white populations within each of these income- or education-level categories. These tables and exhibits suggest we take care not to look at one factor to the exclusion of others. Since no one factor adequately describes an entire group, and since the factors

TABLE 1. Percentages of Adults in Selected Groups

	Percentage of National Sample*
Region	
Northeast	24.2
Southeast	21.6
Central	30.2
West	23.9
	99.9
Sex	
Male	46.6
Female	53.4
	100.0
Race	
Black	13.1
White	81.2
Other	5.8
	100.1
Community size	
Big city and urban fringe	38.5
Medium city and smaller places	61.5
	100.0
Education level	
Not graduated high school	18.5
Graduated high school	30.1
Post high school	51.3
Other responses	0.1
	100.0
Income	
Below $8,000	17.4
$8,000–14,999	34.4
$15,000–25,000	30.9
Above $25,000	11.1
Other responses	6.1
	99.9

**Columns may not total 100% due to rounding.*

TABLE 2. Percentages of Adults at Selected Income Levels by Racial/Ethnic Background

Income Level	Racial/Ethnic Background			
	Black	White	Other	Total*
Below $8,000	25.7%	66.2%	8.1%	100.0%
$8,000–14,999	12.6	80.8	6.6	100.0
$15,000–25,000	7.6	89.9	2.6	100.1
Above $25,000	6.1	92.1	1.8	100.0
Other	17.6	75.6	6.8	100.0

**Rows may not total 100% due to rounding.*

are often interrelated, one factor should not be used to characterize a group.

Besides collecting achievement data, National Assessment also collected background information about health-related issues from the adult sample. Table 5 provides data on the sources that adults reported they used to obtain information about various health topics discussed in this report. Respondents were asked which source they used most during the previous 12 months for each of the issues.

TABLE 3. Percentages of Adults at Reported Education Levels by Racial/Ethnic Background

Education Level	Racial/Ethnic Background			
	Black	White	Other	Total*
Not graduated high school	23.6%	67.3%	9.2%	100.1%
Graduated high school	16.3	79.8	3.9	100.0
Post high school	7.4	88.3	4.4	100.1

**Rows may not total 100% due to rounding.*

TABLE 4. Percentages of Adults at Selected Income Levels by Reported Education Level

Income Level	Education Level				
	Not Graduated High School	Graduated High School	Post High School	Unknown	Total*
Below $8,000	33.1%	29.3%	37.6%	0.0%	100.0%
$8,000–14,999	23.8	34.3	41.9	0.0	100.0
$15,000–25,000	5.9	30.3	63.8	0.0	100.0
Above $25,000	4.0	18.5	77.5	0.0	100.0
Other	37.1	29.3	32.1	1.4	99.9

**Rows may not total 100% due to rounding.*

EXHIBIT 3. Percentages of the National Samples of Black and White Adults in Selected Education Categories

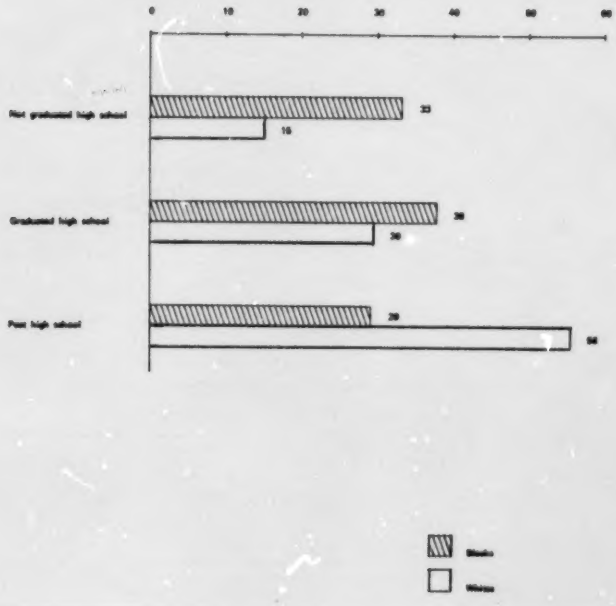
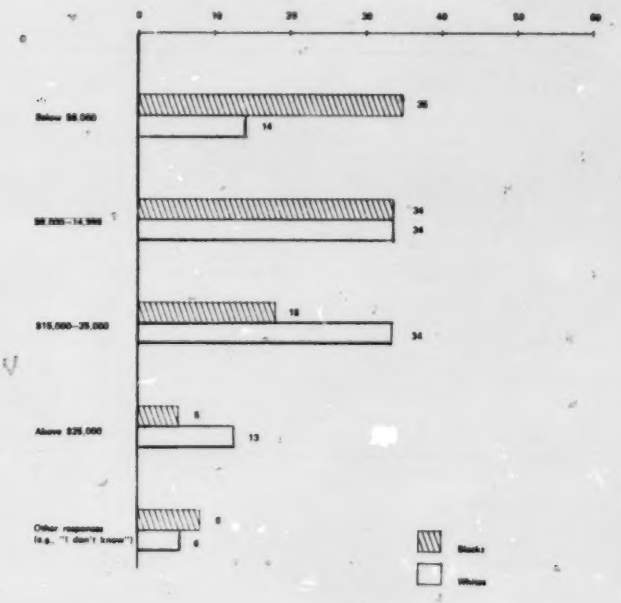


EXHIBIT 4. Percentages of the National Samples of Black and White Adults in Selected Income Categories



Among the findings are:

- The radio is rarely used as a source of information about health issues.
- Magazines, television and books are the most common sources of information about health issues.
- Family or friends are infrequently used as sources of information about health, except in the case of information about health care services.
- A fifth of the young adults obtained no information about human reproduction during the past year.
- Books are the most frequently used sources of information about human reproduction and safety and first aid.
- Television is the most frequently used source for information about drugs and drug abuse.

These findings have implications for how health education programs can most effectively be used to reach the public.

TABLE 5. Percentages of National Adult Health Sample Using Various Sources To Obtain Information About Selected Health Issues During the Past Year

Issue	Sources								
	Radio	TV	Books	Magazines	Newspapers	Family/ Friends	Other	None	Total*
Human reproduction	0.4%	10.1%	25.8%	20.2%	4.2%	5.4%	11.3%	22.5%	99.9%
Drugs and drug abuse	3.2	33.5	7.1	21.9	18.8	2.8	6.4	6.4	100.1
Health services	3.5	17.0	10.1	22.6	14.2	13.7	8.9	10.0	100.0
Diseases and disease control	2.2	22.6	16.3	23.0	11.7	4.5	7.9	11.8	100.0
Safety and first aid	2.0	17.3	23.5	19.3	5.6	8.7	12.6	11.0	100.0

**Rows may not total 100% due to rounding.*

CHAPTER 2

ACCIDENT PREVENTION AND EMERGENCY CARE SKILLS

Large percentages of young Americans do not know some basic dangers related to poor ventilation within the home and do not know the best agent for putting out a grease fire.

Large percentages of young Americans do not know basic techniques to stop bleeding, effective means of administering artificial respiration or what should be done for a victim of serious burns.

Accident Prevention

Accidental injuries are a major public health problem. According to recent statistics, an average of about 276 people are killed and about 186,000 are injured each day in this country,[1] yet many of these accidents could be prevented with minimal changes in our behavior patterns. Anticipating the potential dangers that are around us could lead to the prevention of many accidents.

The first step in accident prevention is basic awareness of the *need* for prevention. How many people know that accidents are the leading cause of death among all persons between the ages of 1 and 38? How many people know the dangers of driving . . . or of being a pedestrian, for that matter? National Assessment asked 17-year-olds and young adults several questions relating to their knowledge of the dangers and major causes of accidents and found that:

- Only two-thirds (64%) of the young adults and half (53%) of the 17-year-olds knew that accidents are the leading cause of death between the ages of 1 and 38.

- Twenty-nine percent of the young adults and 26% of the 17-year-olds did not know that motor vehicle accidents account for approximately half of all accidental deaths.

- About one-fourth of the 17-year-olds (22%) and young adults (28%) did not know that excessive speed by young drivers is the most frequent improper driving practice that leads to motor vehicle accidents.

Several questions related to measures one should take in order to prevent accidents from occurring. The results showed that:

- Almost all (98%) of the young adults and 17-year-olds thought it important to post a list of emergency phone numbers in the house.

- Almost all of the 17-year-olds and the young adults (95% and 94%, respectively) thought it important to have electrical wiring checked.

- Almost all of the adults and the 17-year-

[1] U.S. National Center for Health Statistics, "Current Estimates, Health Interview Survey 1976," *Vital and Health Statistics*, Series 10, No. 119 (November 1977); "Final Mortality Statistics 1976," *Monthly Vital Statistics Report*, Supplement 2 (March 30, 1978), p. 17.

olds (97% and 98%, respectively) thought it important to keep their hands dry when handling electrical appliances.

- Approximately 9 out of 10 young adults (91%) and 17-year-olds (90%) knew that seat belts should be worn even when a person is driving a very short distance.

- Approximately 9 out of 10 young adults (93%) and 17-year-olds (91%) knew that even a good swimmer should not swim alone.

- Almost all young adults (98%) and 17-year-olds (97%) knew it is important to signal your intentions when riding a bicycle.

Several questions related to the dangers of poor ventilation. While 97% of the young adults and 94% of the 17-year-olds knew the danger of running a motor vehicle in a closed garage, considerably fewer understood the dangers involved in cleaning with ammonia or in using a gas space heater. For instance:

- Fourteen percent of the young adults and 24% of the 17-year-olds did not know it is dangerous to close the kitchen or bathroom door when cleaning with ammonia, i.e., that a person could be overcome by the fumes.

- One-third of the young adults and half of the 17-year-olds did not know that a room must be kept ventilated when using a gas space heater.

Although a bad back is rarely fatal, it can be a painful and debilitating problem. Estimates of the number of Americans with back problems run as high as 30 million people. Although some people are born with bad backs, the majority of cases could be avoided with proper preventive techniques.

National Assessment asked 17-year-olds and young adults to classify several statements about lifting heavy objects as correct or incorrect techniques.

Below are statements about how to lift a heavy object from the floor. Is each one a correct technique or an incorrect technique?

	Age Level	Correct technique	Incorrect technique	I don't know.
A. The object should be carried away from the body so that you can see where you are going.	17*	35%	55%	8%
	Adults	26	68	6
B. The back muscles should do more of the lifting than the leg muscles.	17*	12	81	6
	Adults	9	86	4†
C. The arms and elbows should be tucked in close to the body.	17*	74	13	8
	Adults	84	9	7
D. The weight of the body should be centered over the feet.	17*	78	12	8
	Adults	85	7	7

*Between 2 and 3% of the 17-year-olds did not respond to this question.
†Rows might not total 100% due to rounding.

The data suggest that many young Americans ages 17 to 35 do not know the proper way to lift heavy objects. Approximately one-fourth of the young adults and one-third of the 17-year-olds did not know that using one's legs and feet were most important in such lifting. Specifically:

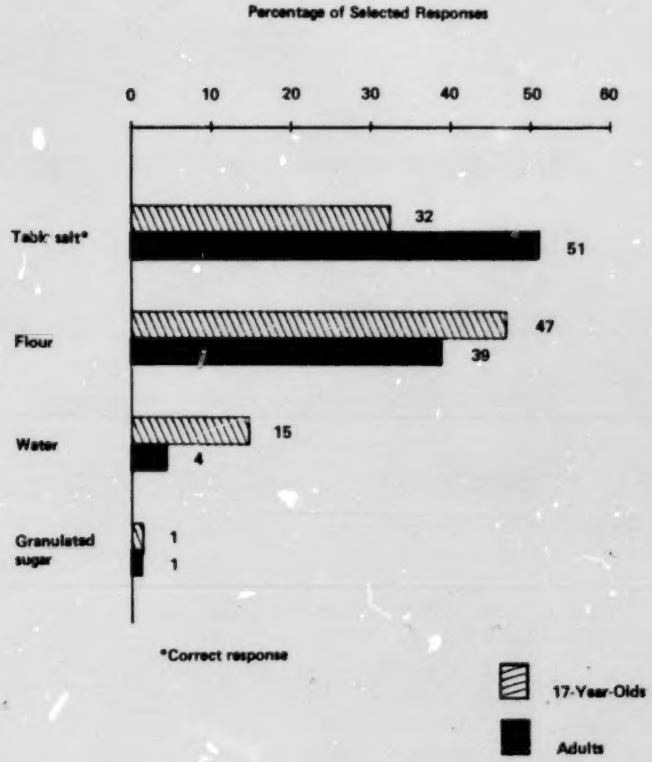
- Thirteen percent of the young adults and 17% of the 17-year-olds did not know that the leg muscles should do more of the lifting than the back muscles.

- Sixteen percent of the adults and 23% of the 17-year-olds did not know that keeping the arms and elbows tucked close to the body causes less stress on the back.

- Fourteen percent of the young adults and 20% of the 17-year-olds did not know that the weight of the body should be centered over the feet.

A final accident-prevention question required both young adults and 17-year-olds to select the best agent from among table salt, flour, water and sugar for putting out a grease fire (see Exhibit 5). Approximately half (51%) of the young adults and one-third

EXHIBIT 5. Percentages of 17-Year-Olds and Young Adults Knowing the Best Agent for Extinguishing a Hot Grease Fire



(32%) of the 17-year-olds knew that salt is the best agent. Thirty-nine percent of the young adults and 47% of the 17-year-olds thought flour should be used, and 15% of the 17-year-olds said they would use water on a grease fire. Knowledge about how to handle this common household problem is obviously not widespread.

Emergency Care Skills

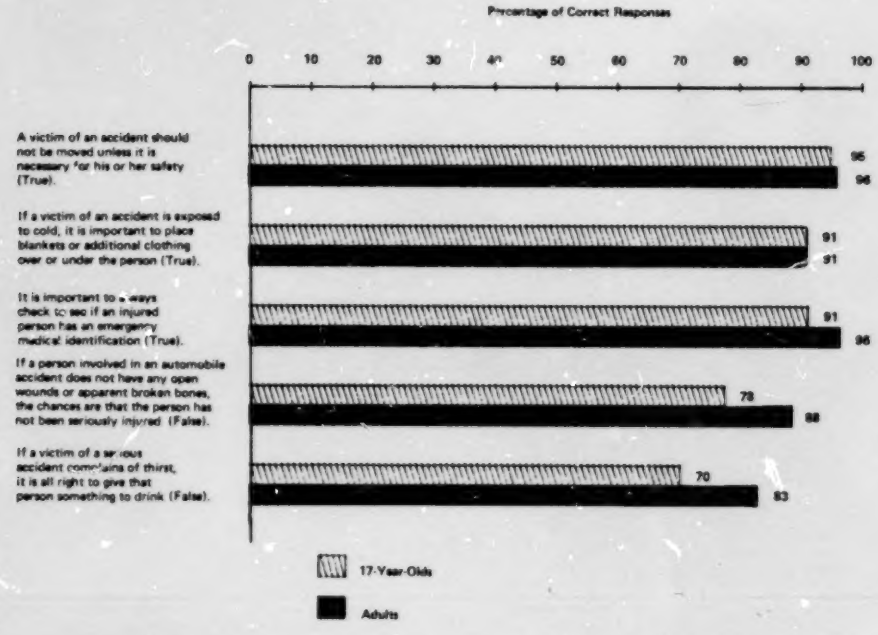
We all could easily find ourselves in a situation in which emergency care skills could save another person's life. A recent compilation of "accident facts" by the National Safety Council showed that:

- Automobile accidents are the number one cause of death among Americans aged 15 to 24.
- The death rate from poisoning has more than doubled since 1957.
- People over 75 suffer almost twice the death rate from choking as any other age group, including infants.
- About 200 people drown in the bathtub each year.

Given the odds over a lifetime, there is a good chance that knowing some very basic emergency care skills could prevent a tragic and unnecessary death.

Automobile accidents are the single largest

EXHIBIT 6. Percentages of 17-Year-Olds and Young Adults With General Knowledge of Emergency Care Skills


Percentage of Correct Responses
0
10
20
30
40
50
60
70
80
90
100
A victim of an accident should not be moved unless it is necessary for his or her safety (True).
95
96
If a victim of an accident is exposed to cold, it is important to place blankets or additional clothing over or under the person (True).
91
91
It is important to always check to see if an injured person has an emergency medical identification (True).
91
96
If a person involved in an automobile accident does not have any open wounds or apparent broken bones, the chances are that the person has not been seriously injured (False).
78
88
If a victim of a serious accident complains of thirst, it is all right to give that person something to drink (False).
70
83
17-Year-Olds
Adults

cause of personal injury. Do young Americans ages 17 to 35 know what to do in case of an accident? National Assessment asked 17-year-olds and young adults several general questions about their initial responses to an accident. The results showed that:

- Almost all of the adults (96%) and the 17-year-olds (95%) knew the cardinal rule of auto-accident rescue experts: A victim of an accident should *not* be moved unless it is necessary for his or her safety.
- Nine out of 10 (91% of each age group) of the 17-year-olds and young adults knew that if an accident victim is exposed to cold, it is important to cover him or her with additional clothes or blankets.
- Ninety-six percent of the adults and 91% of the 17-year-olds knew the importance of checking to see if an injured person has an emergency medical identification.
- Eighty-eight percent of the young adults knew that the lack of apparent injuries does not mean the person has not been seriously hurt, compared with 78% of the 17-year-olds.
- Eighty-three percent of the adults and 70% of the 17-year-olds knew that you should not give the victim of a serious accident something to drink if he or she complains of thirst. Nevertheless, a large minority of respondents either did not know what to do or thought giving a drink was acceptable.

A comparison of the responses of both age groups appears in Exhibit 6.

Two of the greatest dangers in automobile accidents are uncontrolled bleeding and halted breathing. National Assessment asked several questions that surveyed the knowledge of 17-year-olds and young adults on these issues.

Bleeding:

- Although 71% of the young adults and 60% of the 17-year-olds knew where to apply pressure to control severe arterial bleeding on both the lower part of the arm and lower part of the leg, between 30 and 40% of these age groups did not know this simple technique to stop arterial bleeding.

- A majority of both age groups (60% of the adults and 56% of the 17-year-olds) incorrectly believed that a tourniquet is preferred for the control of severe bleeding of an extremity. However, emergency care experts advise that tourniquets may well do more harm than good. If left on too long, they can effectively kill a limb because they inhibit the circulation of oxygen to the limb.

- A majority of both age groups (58% of the young adults and 61% of the 17-year-olds) incorrectly believed that if blood soaks through a pad being used to control bleeding, the pad should be replaced.

- Sixty-nine percent of the young adults and 59% of the 17-year-olds knew that it is a good idea to elevate a severely bleeding limb above the level of a victim's heart if the limb is not fractured. However, between 30 and 40% of these age groups did not know this simple technique to curtail blood loss.

Halted Breathing:

- Approximately 8 out of 10 young adults (83%) and 17-year-olds (78%) knew that the average person might die if his or her oxygen is cut off for six minutes.

- Ninety-two percent of the young adults and 94% of the 17-year-olds knew the importance of removing foreign matter from a person's mouth before beginning artificial respiration; however, considerably fewer knew effective means of administering artificial respiration. Thirty-five percent of the 17-year-olds and 45% of the adults did not know that the chest-pressure arm-lift technique is not the most effective means of artificial respiration. Only 23% of the young adults and 34% of the 17-year-olds knew that the mouth-to-nose technique is an effective resuscitative method and that pinching the victim's nostrils shut was part of the mouth-to-mouth technique.

While a high percentage of both age groups knew some very general first aid techniques, such as not moving a victim and keeping a victim covered, a large percentage did not know much about the basic techniques to control bleeding or assist breathing. Since these are two of the most common emergency problems encountered, the data suggest that a concentrated education effort needs to be undertaken in these areas. The fact that a greater percentage of 17-year-olds did know about artificial respiration techniques may indicate that the effort is at least underway. However, the percentages are still quite low.

Burns are another major emergency care problem. Each year approximately 12,000 people die of burns, and 50,000 require more than six weeks' hospitalization.[2] Proper emergency care of burn victims can limit the complications that often arise.

National Assessment asked 17-year-olds and young adults a few questions about effective ways of treating burns. The results suggest that many young Americans do not know what to do about burns and often consider using treatments that can increase the complications.

The myth that ointments are an effective way of treating burns persists at both age levels. One-fourth (24%) of the young adults and almost one-half (45%) of the 17-year-olds thought that first aid ointments are an effective way of treating severe burns. One-third (34%) of the 17-year-olds thought that oint-

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[2] *America Burning*, report of the National Commission on Fire Prevention and Control, May 1973.

ments are the best treatment for minor burns. Less than half (46%) of the young adults and 17-year-olds knew that applying cold water directly to a severely burned area is an effective burn treatment. Forty percent of the 17-year-olds knew that submerging a minor burn in cold water is the best treatment.

Death caused by suffocation from choking is another serious accident hazard, especially among the elderly or the very young. National Assessment asked young adults and 17-year-olds to respond to two statements about techniques to stop choking. Over 40% of the young adults and 30% of the 17-year-olds did not know that giving a person who has an object lodged in his or her throat bread or soft food is not a good idea. Half of the young adults and almost two-thirds (64%) of the 17-year-olds thought a slap on the back is a good technique to stop choking.

Several other general questions related to first aid were also asked by National Assessment. We found that:

- About 90% of the young adults and 17-year-olds knew that an animal bite requires medical attention.
- Over 90% of the young adults (95%) and 17-year-olds (92%) knew one should not use tweezers to remove foreign objects from a person's eye.

However,

- One-third (34%) of the young adults and over half (54%) of the 17-year-olds did not know that one should not always try to induce vomiting in cases of poisoning.

Finally, young adults were asked to select effective actions to take in the case of a drug overdose in which a woman passes out and her friends do not know the drug that was taken (see the following exercise). Almost all young adults knew that they should get immediate medical help (98%) and that they should keep any remaining drugs available to help in identification (96%). Seven out of 10 respondents (69%) knew that getting the person up and walking her around was an effective action. Over 90% of the young adults knew they should not try any antidotes on their own (91%), or that they should not allow the person to sleep (93%).

Kim is at a party with friends where drugs are being used. She passes out suddenly from an overdose of drugs, and none of her friends knows what she has taken. Which of the following would be effective actions for her friends to take and which would not be effective?

	Effective action	Not effective action	I don't know.
A. Get Kim up and walk her around.	▬	▭	▭
B. Immediately give Kim various antidotes (cures) until they find the one that seems to start bringing her around.	▭	▬	▭
C. Allow Kim to sleep - the natural processes of her body will correct the condition.	▭	▬	▭
D. Get immediate medical help for Kim.	▬	▭	▭
E. Keep any remaining drugs available to help the doctor identify the drugs Kim used.	▬	▭	▭

While most 17-year-olds and young adults knew a variety of general accident-prevention measures and some general techniques for responding to an accident, the percentages at both ages that had specific knowledge of emergency care techniques was significantly smaller. Large percentages of 17-year-olds and young adults did not know basic techniques to stop bleeding, effective means of administering artificial respiration or what should be done for a serious burn victim. While none of us likes to think about the chance of being in a situation that requires immediate help, the possibility of some day needing these skills is great. A little basic knowledge could mean the difference between life and death.

CHAPTER 3

PRACTICING GOOD HEALTH

Good health is not something that just happens. None of us can expect to go through our lives without some illness or health concerns. Nevertheless, each of us can minimize these health risks and problems by actively taking responsibility for guarding our health and reacting quickly when the need arises. This responsibility begins with knowledge of good health practices. We should know how to keep healthy and what to do if we are sick. We should know the symptoms and risks of certain illnesses, and when to seek a doctor's help. We should know of available health care services and how to use them to our best advantage. In short, we must actively look after our own physical and emotional well-being.

Many of the questions asked in the national assessment of health focused on knowledge of and attitudes toward basic good health practices. Seventeen-year-olds and adults were asked a broad range of questions about nutrition; drugs, alcohol and cigarettes; common diseases and disorders; normal and abnormal development; human sexuality; conditions that require medical help; and basic health care services. Their responses to these questions provide us with an indication of what young Americans know and, perhaps more importantly, what they do not know about some basic health concerns.

Nutrition

Most of the 17-year-olds and adults knew that fried foods have more calories than baked or broiled foods, that skim milk has fewer calories than whole milk and that chicken has fewer calories than pork.

Good nutrition is an important aspect of health maintenance and disease prevention. As part of the health assessment, NAEP asked 17-year-olds and young adults several questions about the importance of good nutrition practices, knowledge of basic nutrition, caloric intake and consumer demands. The results indicate that a majority of both 17-year-olds and young adults understand some basic concepts of nutrition as they relate to good health.

Eating well is especially important whenever the body is under unusual stress, such as during pregnancy. Based on the National Assessment results, almost all (97%) of the young adults are aware that an infant has a better chance of survival if its mother is well nourished during pregnancy. This is an encouraging statistic.

In order to determine how many people know the nutrition building blocks essential for survival, National Assessment asked 17-year-olds and young adults two questions. In answer to the first, 81% of the young adults recognized water as more critical for survival than carbohydrates, protein or fat, but only 64% of the 17-year-olds did so. Protein was the second most common choice at both age levels — 10% of the adults and 14% of the 17-year-olds chose it as most critical for survival. In answer to the second, about half (52%) of the young adults and 37% of the 17-year-olds identified carbohydrates (from among proteins, vitamins, carbohydrates and minerals) as the best immediate source of energy. As was the case in the previous question, protein was the choice of many — 26% of the adults and 31% of the 17-year-olds. Vitamins were chosen by 14% of the

adults and 20% of the 17-year-olds.

Two questions specifically related to the nutrition value of specific foods were asked of the young adults. Seven out of 10 of them correctly identified both the most nutritious breakfast and the most nutritious snack. While 89% of the respondents correctly identified "cheese and crackers with lemonade" as the most nutritious snack, only 76% identified "whole wheat cereal with fruit and milk" as the most nutritious breakfast. However, 13% of the young adults selected "waffles, bacon and orange juice" as their response, which was not a bad second choice.

A. Which one of the following would be the most nutritious breakfast?

- ⬭ Milk and donuts
- ⬭ Waffles, bacon and orange juice
- ⬭ Eggs, toast and coffee
- ▬ Whole wheat cereal with fruit and milk
- ⬭ I don't know.

B. Which one of the following would be the most nutritious snack?

- ▬ Cheese and crackers with lemonade
- ⬭ Chocolate cake with lemonade
- ⬭ Hotdog and soft drink
- ⬭ Potato chips and soft drink
- ⬭ I don't know.

Closely related to the issue of good nutrition is the issue of weight control and caloric intake. When asked whether proper nutrition and increased exercise could help in weight reduction, 95% of the young adults and 92% of the 17-year-olds answered affirmatively. When asked to identify foods with lower caloric contents, 89% of the adults and 67% of the 17-year-olds were able to identify correctly at least five out of seven choices. These data suggest that young adults are more calorie-wise than their 17-year-old counterparts.

The percentage of young adults and 17-

Assume that you want to reduce your calorie intake. For each part on this and the next page, choose the one food that has fewer calories. Assume equal servings of each food.

A. Which one has fewer calories?

- ▬ Broiled hamburger
- ⬭ Fried hamburger
- ⬭ I don't know.

B. Which one has fewer calories?

- ▬ Skim milk
- ⬭ Whole milk
- ⬭ I don't know.

C. Which one has fewer calories?

- ⬭ Pork
- ▬ Chicken
- ⬭ I don't know.

D. Which one has fewer calories?

- ⬭ Avocado
- ▬ Tomato
- ⬭ I don't know.

E. Which one has fewer calories?

- ⬭ Peas
- ▬ Spinach
- ⬭ I don't know.

F. Which one has fewer calories?

- ▬ Baked potato
- ⬭ Fried potato
- ⬭ I don't know.

G. Which one has fewer calories?

- ⬭ Banana
- ▬ Apple
- ⬭ I don't know.

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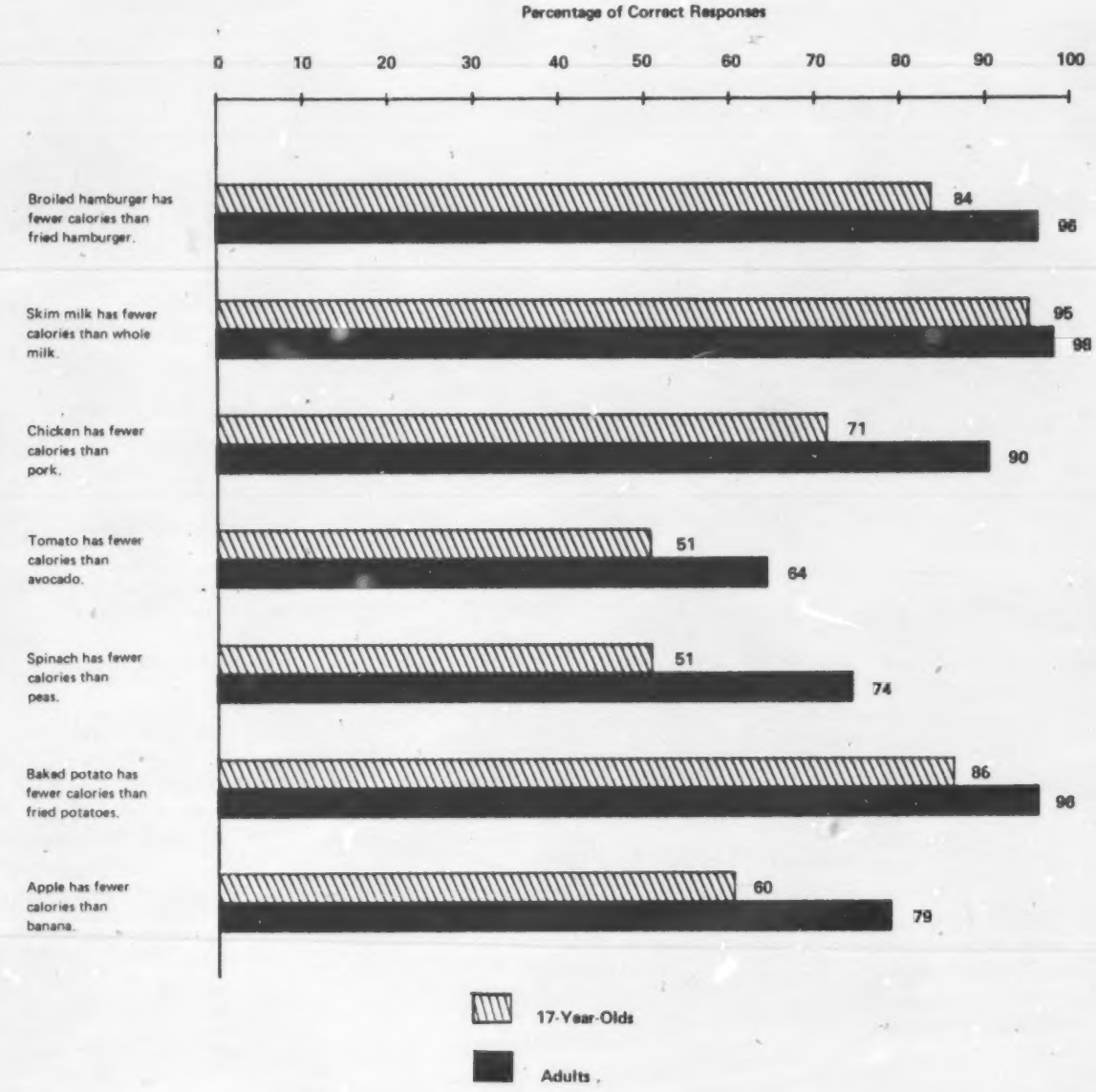
year-olds correctly identifying each of the foods with fewer calories is shown in Exhibit 7. More than 90% of the adults knew that fried foods have more calories than baked or broiled foods, that skim milk has fewer calories than whole milk and that chicken has fewer calories than pork. Although far fewer adults knew the caloric difference between tomatoes and avocados, bananas and apples, and peas and spinach, these foods do not have a significant impact upon an individual's caloric intake in any case. As one consultant put it: "That a large percentage of people do not know that tomatoes have fewer calories than avocados, or spinach fewer calories than peas, is neither surprising nor alarming. That most people know that fried foods have more calories than baked or broiled foods is noteworthy and encouraging since it could have a

EXHIBIT 7. Percentages of 17-Year-Olds and Young Adults Knowing Foods With Fewer Calories



significant effect upon their health." Although the awareness of caloric differences was generally appreciably less at age 17 than among adults, the one exception concerned skim milk and whole milk; only 3 percentage points separated the performance of 17-year-olds and adults on this item. On the questions about the caloric differences between broiled or baked and fried foods, approximately 85% of the 17-year-olds knew that fried foods are higher in calories than baked or broiled foods.

Another important aspect of nutrition education involves knowledge of the consumer food market. As foods become more and more costly, and are enriched, fortified, processed and packaged in a greater variety of ways, knowledge of what to buy and how to shop becomes increasingly important. In order to determine what considerations consumers take into account when choosing foods, National Assessment posed the following question to 17-year-olds and young adults:

Sam knows that eating right is important for good health. He has just moved into an apartment by himself and has started his first job. He doesn't have much money and he wants to stay healthy. Which of the following are important considerations if he doesn't have much money and wants to have a healthy diet and which are not important considerations?

	Important consideration	Not an important consideration	I don't know
A. Which items on his shopping list are bargains for the day	▬	▭	▭
B. The attractiveness of the box or wrapper	▭	▬	▭
C. Which foods are high in protein	▬	▭	▭
D. How to buy for one person	▬	▭	▭
E. How long the food will keep	▬	▭	▭
F. The nutritional value noted on the labels	▬	▭	▭
G. Whether the product is advertised on television	▭	▬	▭
H. Comparison of the price and the unit weight of items	▬	▭	▭

Three out of five adults and 17-year-olds correctly identified all of the eight considerations as either important or unimportant. Over 80% of them were able to identify correctly at least seven of the items, and over 96% could correctly identify at least four.

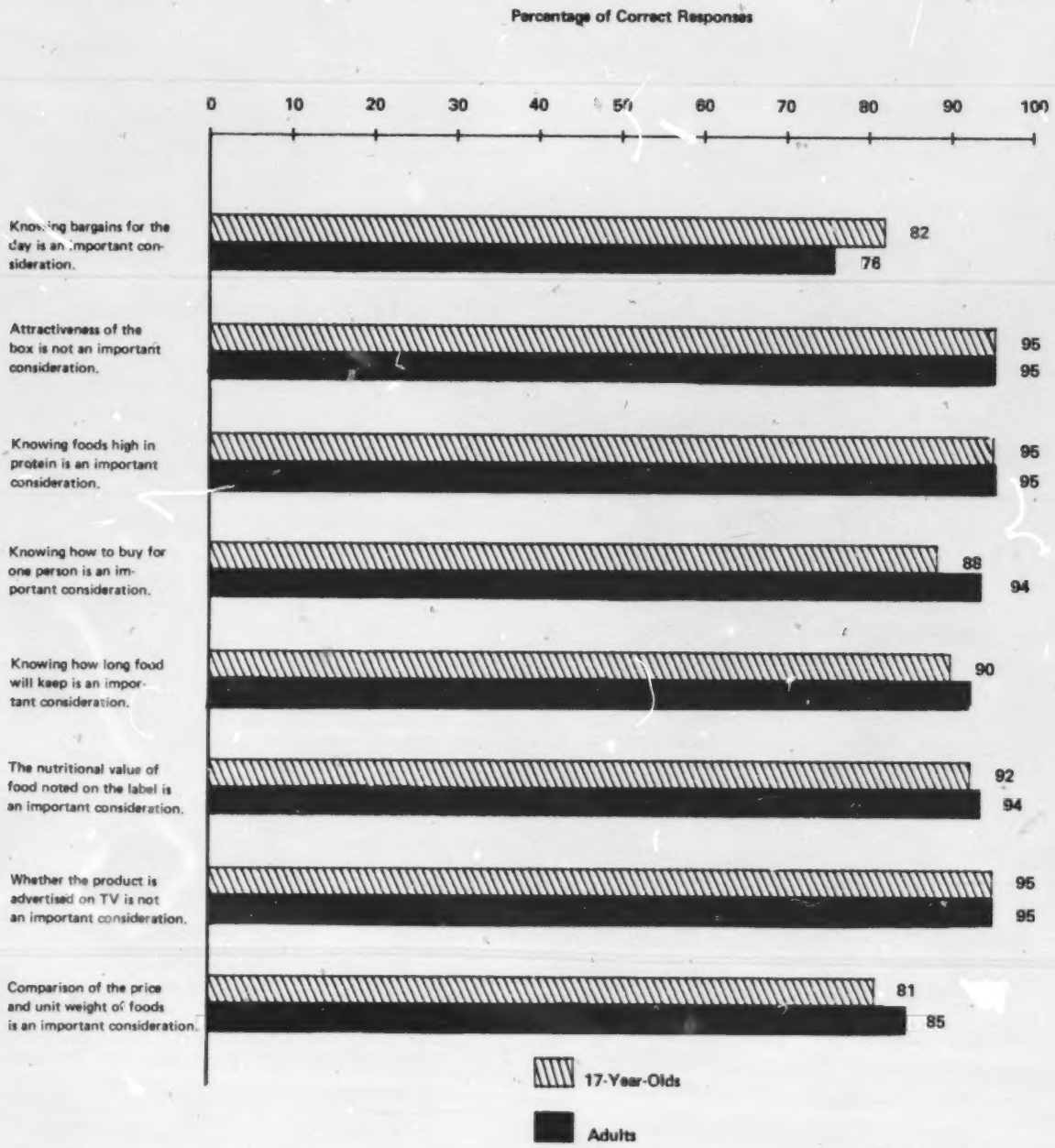
A comparison of the specific percentages of 17-year-olds' and young adults' responses for each question appears in Exhibit 8. The lowest percentages of correct responses were on two items that involved economic considerations of shopping (bargains for the day and comparisons of price and unit weight). However, even on these two items over three-fourths answered correctly. Although the differences between the performance of males and females were not particularly noteworthy, more females than males (86% to 78% at age 17, 80% to 71% among adults) considered bargain shopping important. Seventeen-year-old females were also more aware than their male counterparts of the importance of knowing how to shop for one person; 93% of them, compared to 84% of the males, felt this to be an important consideration. However, there were no significant differences in the response rates of young adult males and females on this question.

Cigarettes, Alcohol and Drugs

Although the majority of 17-year-olds considered cigarette smoking harmful, large percentages of this age group did not fully appreciate the dangers of alcohol or know common signs of the abuse of dexedrine.

The abuse of cigarettes, alcohol and drugs is a much-discussed health problem. Cigarette smoking is considered by many to be the number one health hazard in this country, and massive education efforts to curtail the use of cigarettes have been undertaken in the past several years. To survey the attitudes that young Americans have toward cigarette smoking and health, National Assessment asked 17-year-olds and young adults several questions.

EXHIBIT 8. Percentages of 17-Year-Olds and Young Adults Knowing Considerations of a Healthy Diet



Seventeen-year-olds were asked to rate the connection between cigarette smoking and health on a scale from "definitely harmful" to "definitely not harmful." The majority (79%) rated cigarette smoking "definitely harmful." Fourteen percent of the 17-year-olds considered cigarette smoking "probably harmful," and 4% had no opinion. Only 1% considered cigarette smoking "definitely not harmful," and less than 1% considered cigarettes "probably not harmful." While the results on this question are encouraging, and suggest that 17-year-olds acknowledge the dangers of cigarette smoking, the data do not provide information on the percentage of smokers at this age who consider cigarette smoking harmful.

Both 17-year-olds and young adults were asked to respond to statements about cigarette smoking using a five-point scale ranging from "strongly agree" to "strongly disagree." The results for both age groups are shown in Exhibit 9. In general, 17-year-olds and young adults feel cigarette smoking is harmful. Large majorities of both age groups appear to accept the idea that cigarette smoking is closely related to health problems. The data show that, at least at the intellectual level, the education campaigns to inform people about the dangers of cigarette smoking have been successful. Unfortunately, data from other sources show an increase in cigarette consumption generally, especially among women and teenagers.[1]

National Assessment also asked 17-year-olds and young adults to answer four true/false statements about the effects of alcoholic beverages on the human body. Eighty-five percent of the young adults identified all four statements as true, compared to 61% of the 17-year-olds. The consultants were particularly concerned with the high percentage of 17-year-olds (39%) who did not know *all four* of these effects, and felt the data reflected the general lack of appreciation for the dangers of alcohol within this age group. A comparison of the percentages of correct responses on each question for 17-year-olds and adults is shown in Exhibit 10.

In answer to the question involving alcohol and driving, 15% of the 17-year-olds apparently did not believe that alcohol affects driving ability after one drink. In comparison, only 5% of the young adults felt the same way. Only 3% of the young adults, compared to 12% of the 17-year-olds, did not believe alcohol is physically addictive.[2]

Finally, 17-year-olds were asked several questions about the abuse of "speed," the common name for the drug dexedrine. Only one out of three respondents was able to identify overactivity and jitteriness, shortness of temper, difficulty sleeping and the necessity for increased amounts of the drug to maintain energy as common signs of abuse of dexedrine. Over half the 17-year-olds did not know the effect of dexedrine on appetite or heart rate and blood pressure. On the average, 20% of the 17-year-olds responded that they

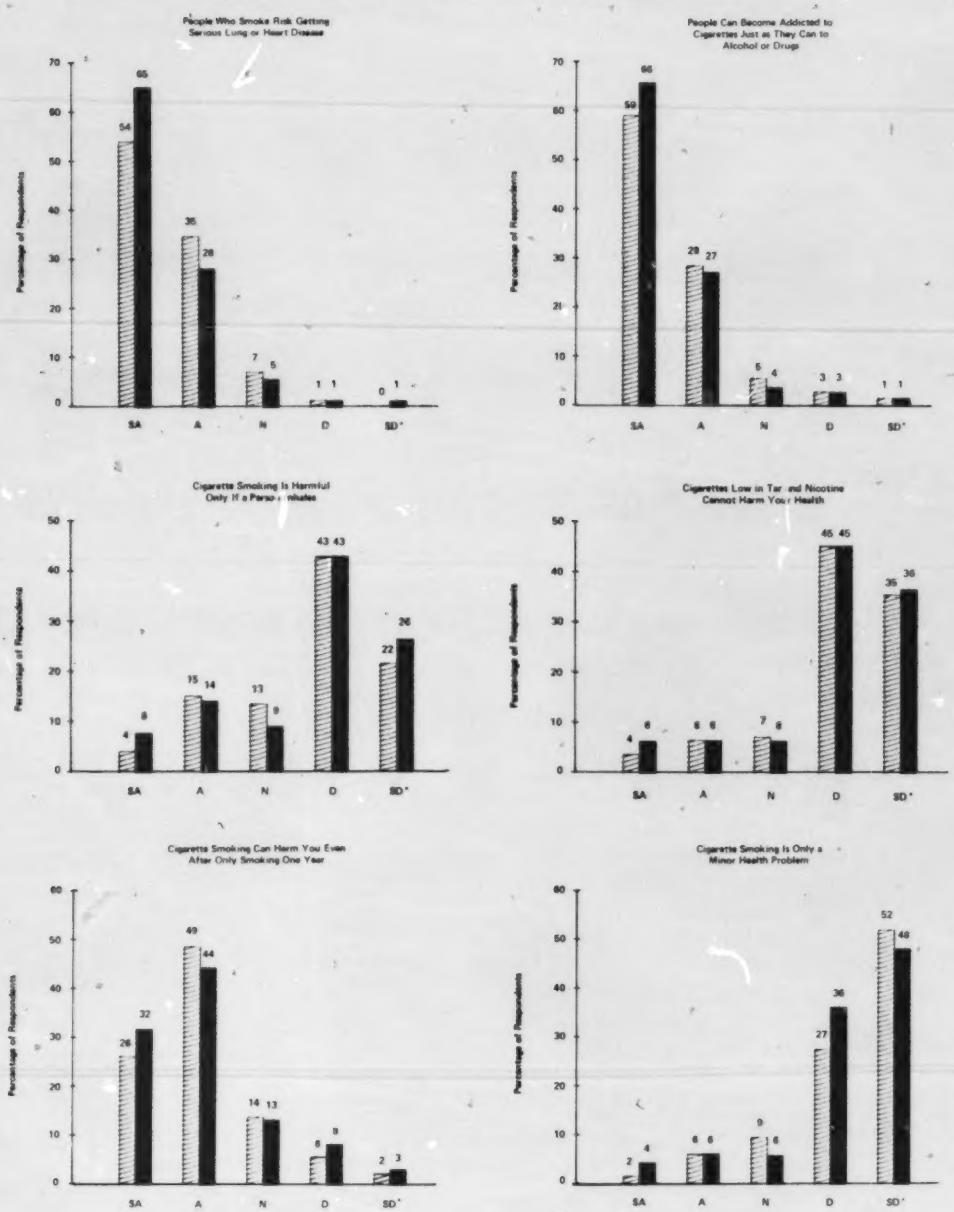
Is each of the following a common sign of abuse of the drug known as "speed" ("uppers" or dexedrine)?

	Yes	No	I don't know.
A. Increased appetite	(1)	●	(3)
B. Overactivity and jitteriness	●	(2)	(3)
C. Shortness of temper	●	(2)	(3)
D. Difficulty sleeping	●	(2)	(3)
E. Increasing amounts of the drug needed to maintain level of energy	●	(2)	(3)
F. Decreased heart rate and blood pressure	(1)	●	(3)

[1] U.S. Department of Commerce, "Cigarette Smoking and Health Characteristics: 1970 and 1974," *Statistical Abstract of the United States: 1977*, 98th ed. (Washington, D.C.: U.S. Government Printing Office, 1977), p. 117.

[2] Between 1 and 4% of the 17-year-olds and young adults did not respond to these questions.

EXHIBIT 9. Percentages of 17-Year-Olds and Young Adults Displaying Various Attitudes Toward Cigarette Smoking


People Who Smoke Risk Getting Serious Lung or Heart Disease
People Can Become Addicted to Cigarettes Just as They Can to Alcohol or Drugs
Cigarette Smoking Is Harmful Only If a Person Inhales
Cigarettes Low in Tar and Nicotine Cannot Harm Your Health
Cigarette Smoking Can Harm You Even After Only Smoking One Year
Cigarette Smoking Is Only a Minor Health Problem
Percentage of Respondents
SA
A
N
D
SD*

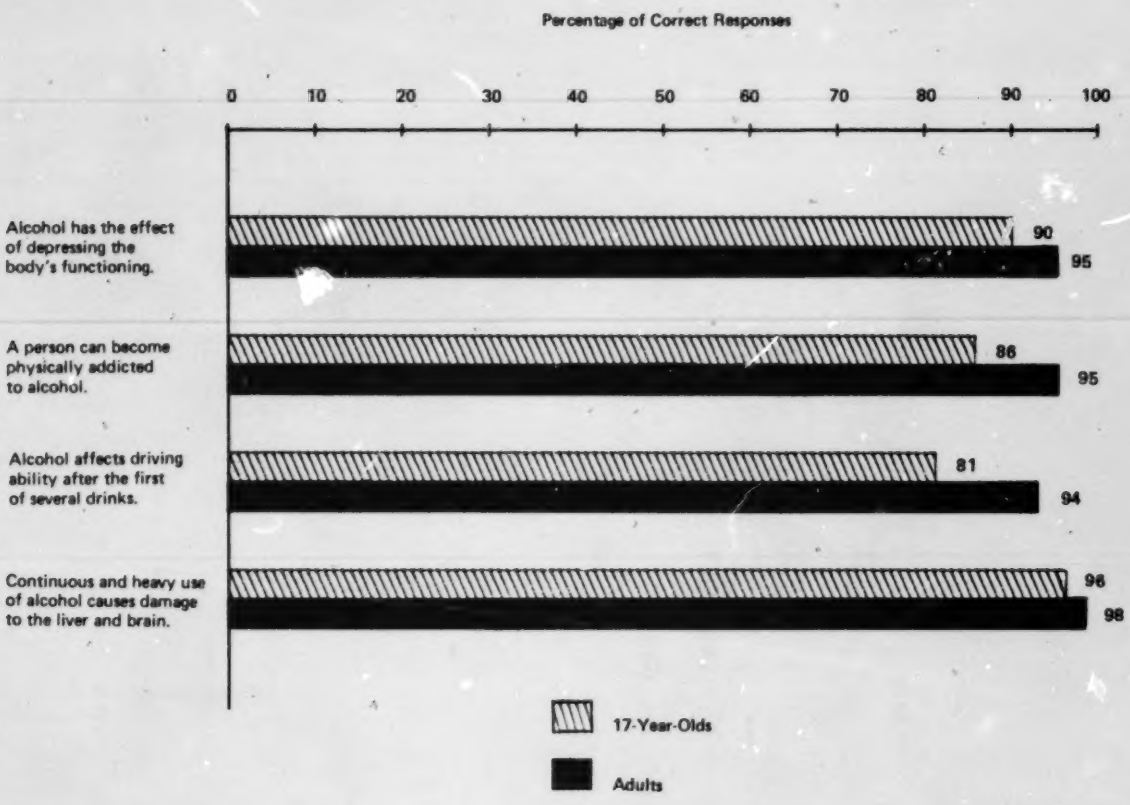
*Numbers might not total 100% due to rounding and/or nonresponse.

SA – Strongly Agree
A – Agree
N – Neither Agree nor Disagree
D – Disagree
SD – Strongly Disagree

17-Year-Olds

Adults

EXHIBIT 10. Percentages of 17-Year-Olds and Young Adults Knowing the Effects of Alcohol on the Human Body



did not know whether any given symptom is or is not a sign of dexedrine abuse. The high incorrect response rate as well as the high "I don't know" response rate raises the possibility that a great many 17-year-olds lack information about a very dangerous drug.

Diseases and Disorders

Ninety-five percent of the young adult women knew that a pap smear is commonly used to detect cervical cancer, and 86% knew they should examine their breasts monthly after their menstrual period.

Most young adults recognized basic conditions for which medical help is indicated.

Approximately half of the 17-year-olds had limited understanding of the seriousness of being 45 pounds overweight at age 15.

Less than half of the 17-year-olds and young adults knew that rheumatic fever can result from an untreated strep infection.

More than one-third of the 17-year-olds did not recognize that a dry, hacking cough or a red, swollen, tender cut requires medical help.

Early detection and care of curable or reversible illness is an important part of good health practice. People should be particularly aware of those diseases for which early detection is critical. For example, women should know the risks of breast and cervical cancer and be aware of early detection techniques. In addition, maintaining good health requires an awareness of common diseases and disorders that are potentially dangerous, but may not immediately seem so. Finally, basic good health requires that we know our limitations. We cannot know everything about our health and sometimes need medical advice and help.

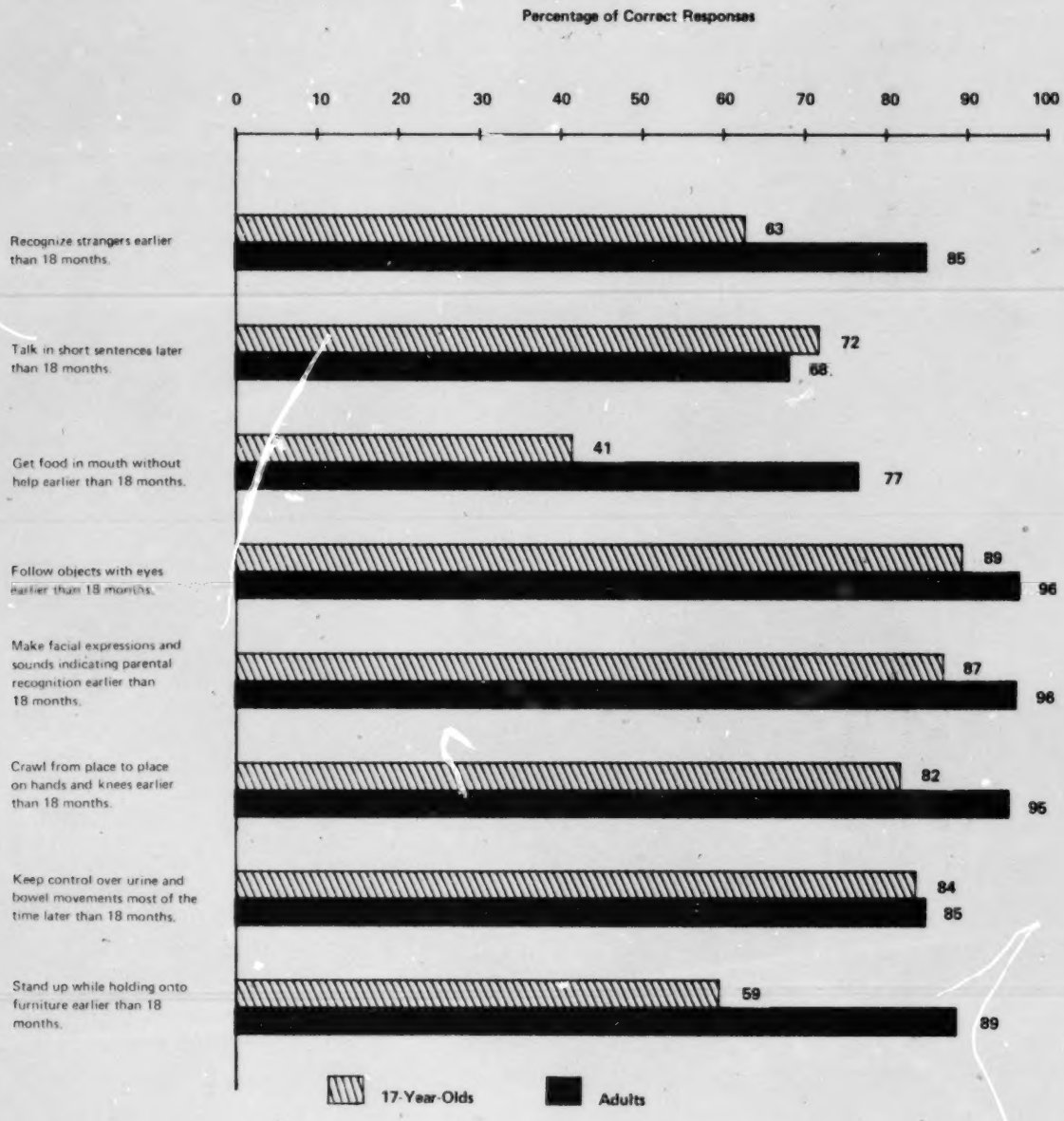
One aspect of knowing if and when to be concerned about health is being aware of the normal developmental changes that occur as people grow older. As part of the health assessment, several statements about developmental changes in infants were shown to both 17-year-olds and young adults. Respondents were asked to decide whether or not specific developmental changes usually occurred earlier than 18 months of age. The statements involved such changes as being able to talk in short sentences, following objects with the eyes, making facial expressions, crawling, and controlling urine and bowel movements. A total of eight statements were included. Ninety-one percent of the young adults were able to identify the correct time frame for at least six of the eight changes. At age 17, however, this percentage was 68%. Respondents in the 26- to 35-year-old age group clearly had a better understanding of basic child development. No doubt their experiences as parents had some effect on their knowledge. A comparison of the percentages of young adults and 17-year-olds responding correctly to each specific statement appears in Exhibit 11. Although the percentage of young adults responding correctly was greater than that of 17-year-olds, in one instance this was not the case. Seventy-two percent of the 17-year-olds — compared to 68% of the adults — knew that a child generally does not talk in short sentences until after the age of 18 months. On one item, only 4 out of 10 (41%) of the 17-year-olds knew that a child should be able to get food to his or her mouth before 18 months. In comparison, 3 out of 4 (77%) adults realized this.

Another series of questions was asked of 17-year-olds in order to determine their knowledge about the normal and abnormal changes that occur as part of growing up. Nine out of ten 17-year-olds knew that pimples on the face, concern about appearance, desire for independence and feelings of doubt about the future are normal aspects of growing up. Approximately eight out of ten knew that blurred vision, frequent headaches and a mole increasing in size are abnormal developments. Perhaps the one surprise was that almost one-third of the 17-year-olds did not know that dental cavities frequently occur as people grow up.

While nine out of ten (89%) 17-year-olds knew that the appearance of acne is a frequent aspect of growing up and did not regard it as abnormal, their knowledge about the causes and care of acne was less complete. One out of four 17-year-olds incorrectly believed that vigorous rough scrubbing of acne would improve it. Over half (51%) incorrectly believed that eating chocolate and sweets is the major cause of acne. However, approximately eight out of ten 17-year-olds did know that acne is worse in some families (79%) and that some medicines can aggravate acne (82%). In general, females were more knowledgeable about the causes and care of acne than were the males. For example, 68% of the 17-year-old females knew that rough scrubbing would not improve acne, compared to 52% of the males. Likewise, 48% of the females knew that chocolate is not a major cause of acne, compared to 28% of the males.

No matter how healthy we are, we are sooner or later bound to catch a cold. Young adults were asked to respond to four statements about the common cold that tested their knowledge of potential side effects — fever, coughs, earaches and sore throats — of colds. Ninety-three percent of the young adults realized that a persistent sore throat is the sign of a potentially serious infection.

EXHIBIT 11. Percentages of 17-Year-Olds and Young Adults Knowing Normal Development Times for a Child



Eighty-six percent agreed that an earache suggests that a physician's examination is desirable. While 84% realized that a fever associated with a cold only lasts three or four days, only slightly more than half (55%) knew that a cough could linger on for two or three weeks. On a related question about colds, 3 out of 10 adults incorrectly thought that an antibiotic like penicillin could cure a cold in two to three days. Of the five questions asked about the common cold, two-thirds of the adults were able to respond to at least four questions correctly.

Young adults were also asked several questions about coughs. Almost all (97%) of the young adults knew that wheezing or shortness of breath associated with a cough are good reasons to see a doctor. Eight of 10 (79%) knew that cough medicines do not cure coughs. The percentage of young adults correctly answering each statement about coughs follows.

Many people develop coughs. Which statements about coughs are true and which are false?

	True	False	I don't know.
A. Most hacking coughs are associated with tuberculosis.		78%	
B. Coughing is one way of removing secretions from the body.	70%		
C. Cough medicines cure coughs.		79%	
D. Coughs that progress to wheezing or shortness of breath are indications to see a doctor.	97%		
E. Most coughs are due to an irritation of the bronchi (wind pipes).	73%		

Both 17-year-olds and adults were shown a series of statements about a common intestinal disorder — diarrhea. They were asked to mark the statement either true or false. Nine out of 10 (92%) young adults knew the only important medical complication of diarrhea — that it could cause dehydration; however, at age 17 only two-thirds of the respondents knew this. The percentages of 17-year-olds and adults marking each specific statement about diarrhea correctly is shown in Exhibit 12. Based on these responses, adults appear to know more about the causes, symptoms and control of diarrhea than 17-year-olds. The difference between the levels of correct responses ranged from a minimum of 18 points to a maximum of 28 points.

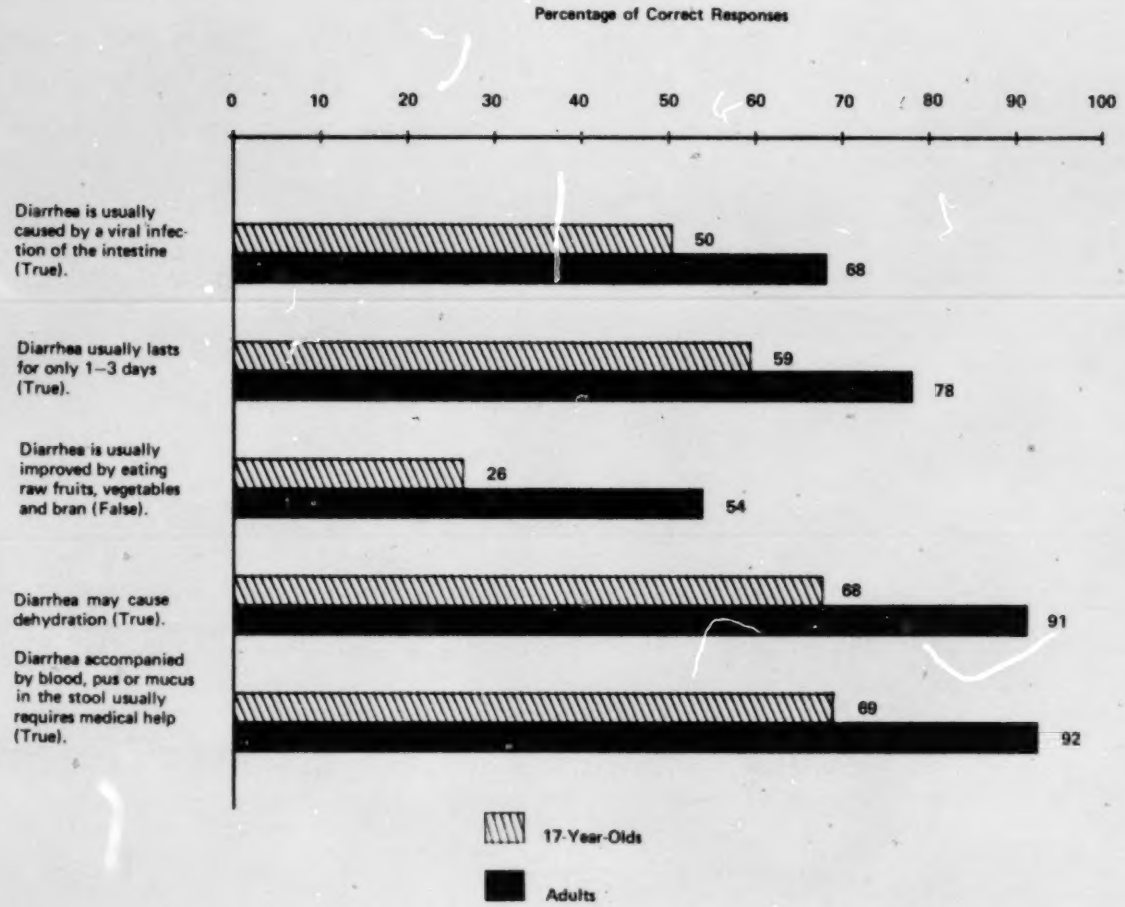
A streptococci infection, commonly called a strep throat, is a very serious disease. National Assessment asked 17-year-olds and young adults to respond to a series of seven true/false statements about strep throat in order to measure knowledge about the disease. A comparison of the percentages of respondents at each age answering specific statements correctly is shown in Exhibit 13.

More than 90% of both the 17-year-olds and adults knew that strep throat requires medical attention. However, far fewer in each age group knew that rheumatic fever can result from an untreated strep infection. Only 46% of the adults and 28% of the 17-year-olds realized this. One out of three 17-year-olds did not know that a person with a severe sore throat should have a strep culture taken, and over 25% of this age group did not know that strep throat is communicable. Less than one-third of either age group knew that strep can occur without symptoms.

Americans have become increasingly conscious of the relationship between their weight and health. Dieting and dieting fads abound. However, while being overweight is clearly unhealthy, people must also guard against improper methods of weight reduction. National Assessment asked young adults whether borrowing diet pills was a safe action to take when attempting to lose weight. Almost all (98%) of the adults knew that they should not borrow pills from a friend in order to safely lose weight.

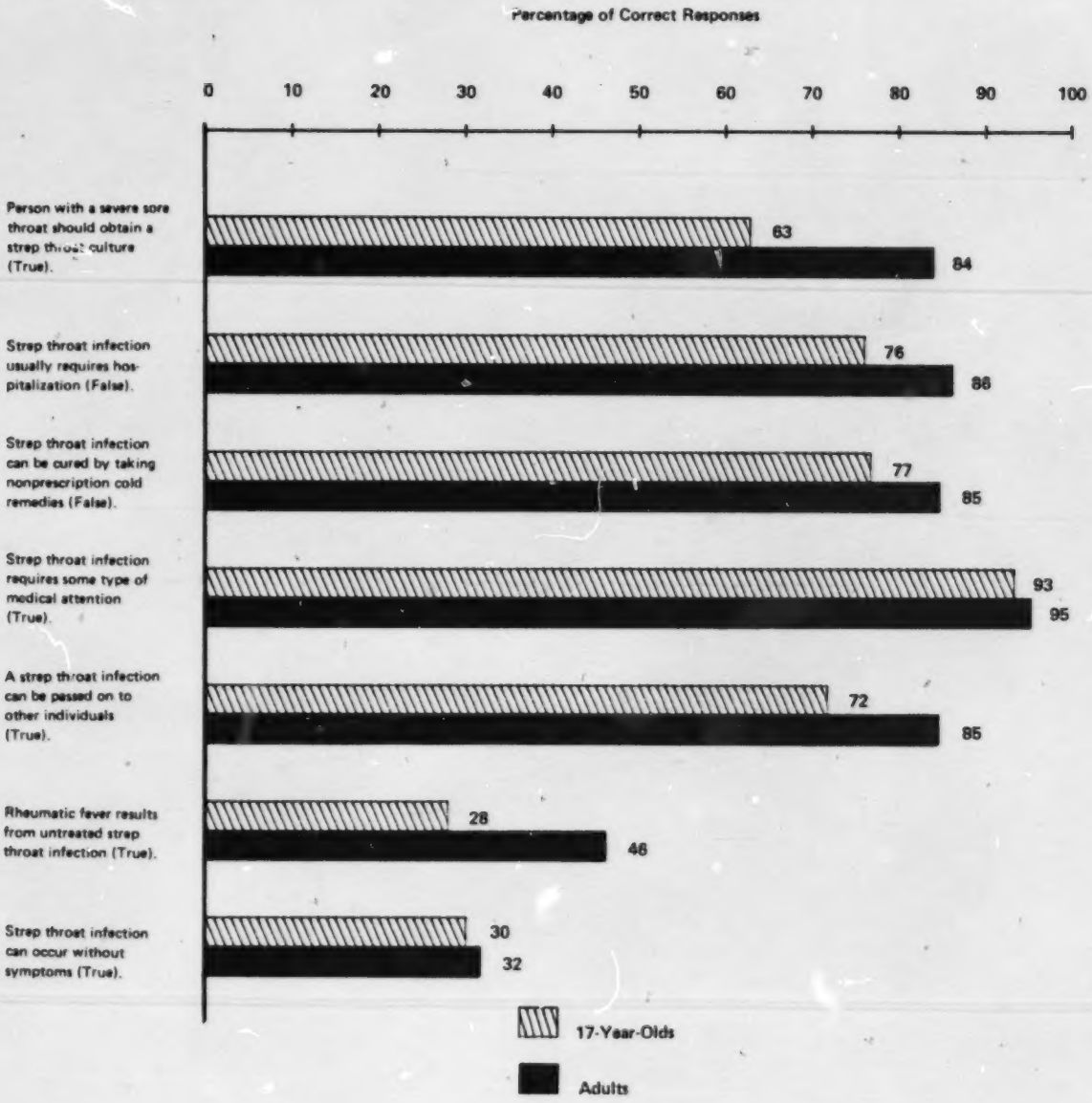
Both 17-year-olds and adults were asked to respond to several statements about a 15-year-old boy who was 45 pounds overweight.

EXHIBIT 12. Percentages of 17-Year-Olds and Young Adults Recognizing the Causes, Symptoms and Control of Diarrhea



Approximately 9 out of 10 respondents at each age knew the relationship between high blood pressure and excess weight (96% of the adults, 88% of the 17-year-olds) and that proper nutrition and increased exercise would be helpful (92% of the adults and 95% of the 17-year-olds). Eighty-three percent of the adults and 73% of the teenagers recognized that the condition might be a result of a hormone imbalance and should be checked. Seventeen-year-olds were asked to respond to one additional statement that dealt with "outgrowing" the overweight problem by age 21. One-fourth of them incorrectly thought that an overweight 15-year-old would probably outgrow the problem. Approximately another quarter responded that they did not know. That approximately half of the 17-year-olds had such limited understanding of the implications of being 45 pounds overweight at age 15 concerned National Assessment's health consultants. They felt that the lack of knowledge in this critical area was an important factor in the formation of bad habits and reflected the blasé attitude many people have about the problems of being overweight.

EXHIBIT 13. Percentages of 17-Year-Olds and Young Adults Recognizing the Causes, Symptoms and Control of Strep Throat



Cancer remains the second leading cause of death in the United States. However, thousands of people could be cured each year if more early detection took place. One well-developed test for early cancer detection is the pap smear, which is used to detect cancer of the cervix in women at its earliest stages. The test is simple and safe. Nevertheless, thousands of women fail to have periodic pap smears, and approximately 10,000 of them unnecessarily die each year.[3]

In order to learn how many young adults knew what a pap smear is used to detect, National Assessment asked:

Is a pap smear commonly used to detect each of the following?

	Pap Smear Commonly Used	Pap Smear Not Commonly Used	I don't know.
A. Tuberculosis	8%	79%	12%
B. Syphilis	51	31	17
C. Cervical cancer	88	4	7
D. Pregnancy	25	64	10
E. Gonorrhea	53	27	19
F. Anemia	5	79	15
G. Breast cancer	9	79	10

Eighty-eight percent of the adults knew that a pap smear is used to detect cervical cancer. Among women, 94% of the young adults knew the purpose of a pap smear, and only 2% said that pap smears are not commonly used to detect cervical cancer. Surprisingly large percentages of the adults incorrectly thought that pap smears are used to detect conditions related to sexual activity. Approximately one-half of them thought pap smears could be used to detect syphilis or gonorrhea, while 25% thought a pap smear could detect pregnancy. More women than men thought pap smears could be used to detect syphilis and gonorrhea; less thought pap smears could detect pregnancy. The high percentages of people who have misconceptions about the relationship of pap smears to venereal disease may help explain why some women do not take advantage of the test. These women may be concerned about revealing their sexual activity as part of taking the test.

Both men and women were asked to respond to a series of true/false statements about breast cancer as well. Over nine-tenths of the adults knew that a woman could examine her own breasts and that she should start doing it before she is 40 years old. Three-fourths (76%) knew that a woman should examine her breasts monthly after her menstrual period. Although 86% of the women knew they should examine their breasts monthly, 9% of the women did not think it is important to do so, and 5% said they did not know. Surprisingly few women — 38% — knew that it is normal for a woman to have lumps in her breasts just prior to menstruation. Considerably fewer men (15%) knew so.

Which of the following statements about examining for breast cancer are true and which are false?

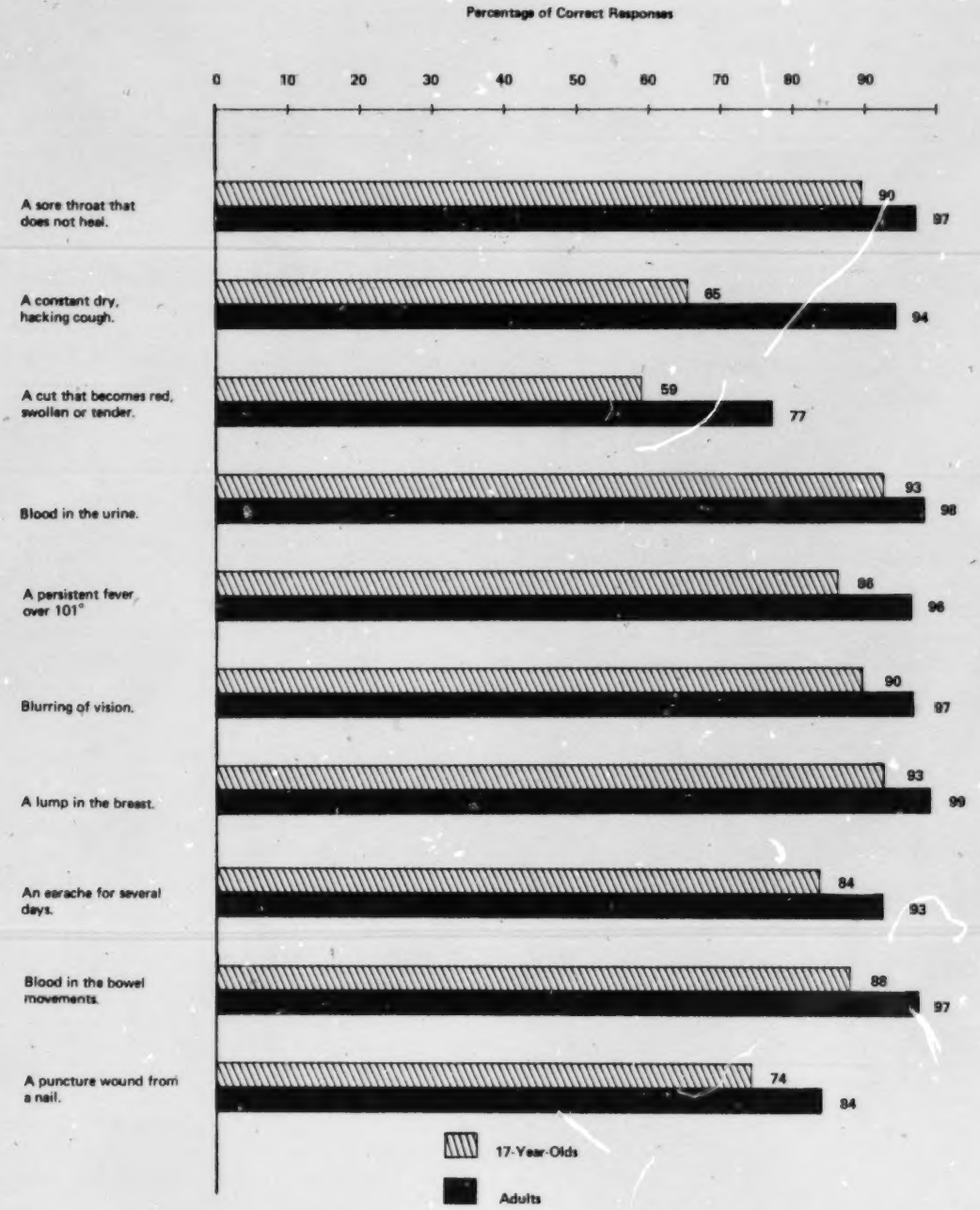
	True	False	I don't know.
A. A woman should examine her breasts monthly, after her menstrual period.	76%	11%	13%
B. A woman should not examine her own breasts.	4	94	2
C. There is no need to check for breast cancer until a woman is 40 years old.	1	97	1
D. It is normal for a woman to have lumps in her breasts just prior to menstruation.	27	48	23

Knowing when to seek medical help is another important aspect of good health practice. National Assessment asked several questions about seeking medical help or taking care of some health problems oneself.

Seventeen-year-olds and young adults were given a list of 16 health conditions and asked to decide whether each condition required medical help or could be safely handled

[3] *Today's Health*, December 1975, p. 42.

EXHIBIT 14. Percentages of 17-Year-Olds and Young Adults Recognizing Health Conditions That Require Medical Help



without help. The list included potentially serious medical conditions, such as blood in the urine or bowels; persistent problems, such as sores that do not heal; and minor problems, such as an upset stomach or cold sores. A comparison of the percentages of young adults and 17-year-olds who correctly identified each condition as one requiring medical help is found in Exhibit 14. The percentages of respondents correctly identifying conditions that could be taken care of without medical help are found in Exhibit 15. Of the 10 conditions that require medical help, 95% of the young adults and 79% of the 17-year-olds identified at least 8 correctly. Ninety-six percent of the adults and 94% of the 17-year-olds correctly identified at least 3 out of 6 conditions that do not require medical help. Generally speaking, a greater percentage of young adults recognized when medical help is required. A difference in the level of concern between 17-year-olds and young adults was particularly noticeable for the constant, dry, hacking cough and the swollen cut. Over 30% of the 17-year-olds thought they could take care of those two conditions by themselves. On the other hand, almost one-fourth (24%) of the 17-year-olds mistakenly thought they should seek medical help for occasional loose bowels.

On a question about conditions that would indicate the need for an eye examination, almost all (97%) of the 17-year-olds considered blurring of vision as sufficient reason for an examination. Approximately 8 out of 10 considered frequent headaches (77%), a sudden sharp pain in one eye (78%) or pus draining from the eye (81%) indications of need for an examination.

On the other questions related to seeking medical help, National Assessment found the following:

- Eighty-six percent of the adults correctly recognized that an earache associated with a common cold is a sufficient reason for a physician's exam. However, 8% did *not* think so, and 5% did not know.

- Ninety-seven percent of the adults knew coughs that lead to wheezing or shortness of breath indicate it would be wise to see a doctor.

- Over 90% of the young adults (95%) and 17-year-olds (93%) knew that a strep throat infection requires some type of medical attention.

- Most young adults (92%) knew that blood, pus or mucus in the stool usually requires medical attention. While only 69% of the 17-year-olds knew this, on another question related to blood in the bowel movements, 88% of the 17-year-olds recognized that medical help is required. The low response may have been the result of not understanding the term "stool."

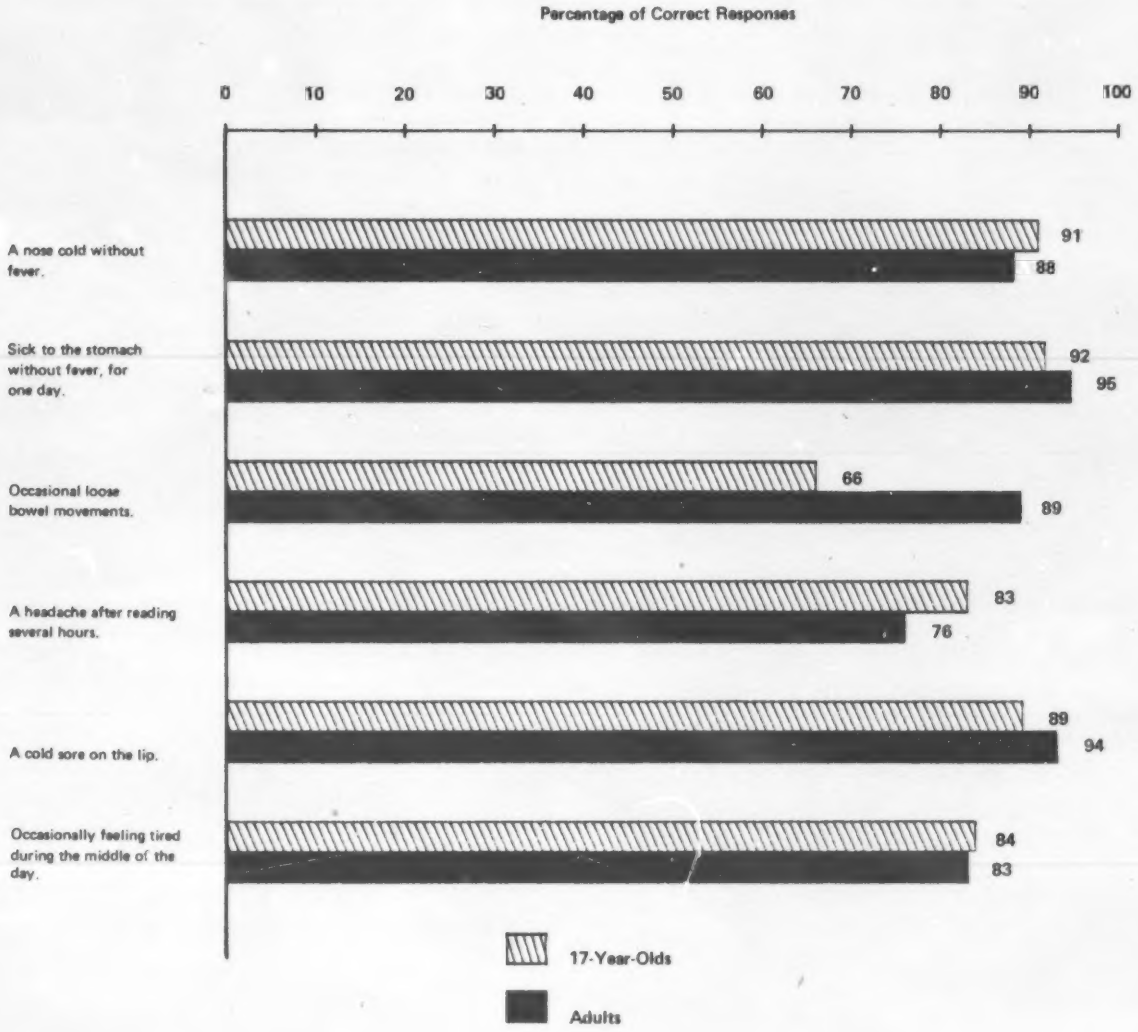
- Eighty-three percent of the adults and 73% of the 17-year-olds knew that a young man with a severe overweight problem might have a hormone imbalance that should be checked.

- Ninety-eight percent of the adults knew that a person who suspects he or she has venereal disease should receive treatment and follow-up by a doctor.

- Almost all adults knew that people should not try a home remedy for gonorrhea (94%) and that their sexual partners should seek medical diagnosis (92%).

Finally, National Assessment asked both young adults and 17-year-olds a question about reading a thermometer that showed 103° and interpreting the reading as being above normal body temperature. Although 85% of the young adults could both read the thermometer and make a correct judgment based on the reading, at age 17 only 62% of the respondents could do so.

EXHIBIT 15. Percentages of 17-Year-Olds and Young Adults Recognizing Health Conditions That Do Not Require Medical Help



A. What is the temperature reading on the thermometer?

- ⬭ 98.6 degrees
- ⬭ 100 degrees
- ⬭ 102.5 degrees
- ⬬ 103 degrees
- ⬭ 104 degrees

⬭ I don't know.

B. What would you do if this were your temperature?

- ⬬ Seek medical advice -- the reading is above normal range.
- ⬭ Seek medical advice -- the reading is below normal range.
- ⬭ Nothing needs to be done -- the reading is within normal range.

⬭ I don't know.

Human Sexuality

Most young adults were knowledgeable about birth control pills; however, fewer were as well versed about foam, I.U.D.'s or condoms.

Only two-thirds of young adults realized that family planning clinics provide counseling and information to pregnant women. Many young adults were not aware of the full range of services these clinics offer.

Approximately 40% of the young adults did not know that a condom is a generally effective safeguard against gonorrhea.

A sizeable minority (18%) of young adult men either believed that a woman who was raped provoked the attack (10%) or said they did not know (8%).

Knowledge of sex-related health issues revolves around three major concerns: the prevention of pregnancy, family planning and prenatal care, and the detection and treatment of diseases related to sexual contact. To determine what young adults knew in these three areas, National Assessment included a number of sex-related questions in the health assessment. Because the NAEP policy committee felt sex-related questions are too controversial and could potentially endanger the administration of the assessment in many school districts, these questions were not administered to any 17-year-olds.

Young adults were given a series of statements related to various methods of birth control and asked if each statement was true or false. Eighty-five percent of the young adults knew the basic definition of birth control: that birth control refers to some means of keeping the sperm from meeting the ovum. Several other statements required knowing what various birth control measures are:

- Ninety-six percent of the young adults knew what a condom is and how it is used.
- Eighty-five percent knew what an I.U.D. is and how it is used.
- Ninety-one percent knew that a diaphragm is not used by men.

With respect to the proper use of birth control measures:

- Nine out of 10 respondents knew that birth control pills are not effective if taken one day before intercourse.
- Almost all (97%) knew that a woman should only take birth control pills prescribed by her doctor.
- Ninety-four percent knew that a history of migraine headaches or of blood clots should be discussed with a doctor before taking birth control pills.
- Approximately 7 out of 10 (69%) young adults knew that in order to be effective, foam has to be inserted into the vagina

immediately prior to intercourse.

- Ninety-three percent knew that abortion is a means of terminating pregnancy.

Several statements related to the effectiveness of various birth control procedures. Nine out of 10 (90%) young adults knew that prescribed birth control pills are about 99% effective if taken correctly. However, only half of the young adults knew about the effectiveness of I.U.D.'s as a method of birth control. Twenty-three percent of the young adults thought I.U.D.'s are only about 50% effective. Twenty-seven percent stated they did not know how effective I.U.D.'s are. Even fewer young adults knew the effectiveness of contraceptive foam. Approximately one-third (36%) thought that foam has only a 20% effectiveness; an equal percentage knew the effectiveness is greater than 20%. Thirty percent of the young adults did not know the effectiveness of foam. At a more general level, three out of four (74%) knew that condoms are not completely effective in preventing pregnancy. Nevertheless, one-fifth (21%) of the young adults assumed they are completely effective. Approximately the same percentage (18%) of young adults thought the rhythm method to be a highly effective means of birth control. Thirteen percent did not know about the effectiveness of the rhythm method as a birth control technique.

Two statements were concerned with the availability of birth control devices. While 96% of the young adults knew that condoms can be purchased without a prescription, only 83% realized that contraceptive foam does not require a doctor's prescription either.

Looking at the birth control items overall, it appears that young adults are most knowledgeable about birth control pills. Fewer young adults were as well versed about foam, I.U.D.'s or condoms. The data suggest that an increased education effort needs to be undertaken to provide people with more knowledge about various options for birth control.

Young adults were also asked to respond to five statements about conditions necessary for conception. Knowledge of what is necessary for conception decreased as the questions became more specific. Ninety-six percent knew that an egg and sperm cell must unite in order for conception to occur. Eighty-three percent knew that the females must produce a ripe egg. Only two-thirds (64%) of the young adults knew that conception occurs in the Fallopian tube. There were important things the adults apparently do *not* know about conception. Almost three out of four believe that the male must ejaculate for conception to occur, and half (51%) believe the penis must enter the vagina. Apparently many young adults do not understand the risks and are making false assumptions about what might cause or prevent pregnancy.

Knowledge of the types of services offered by family planning clinics is related to the issue of birth control. High percentages of young adults knew that family planning clinics usually provide information and counseling about alternative methods of birth control (92%) and that these same clinics usually provide information about reproduction (87%). Only two-thirds (67%) of the adults realized that family planning clinics provide information and counseling to pregnant women. However, the percentage of black young adults aware of this service was 5 points higher than the nation as a whole. Less than half of the adults knew that family planning clinics usually offer services to people who have fertility problems. While most of them knew about the general services offered by these clinics, fewer knew of more specific services. The data suggest that young adults are not aware of the full range of services that family planning clinics usually offer, and therefore most likely do not take full advantage of these services.

The prenatal health of both mother and child was the focus of several questions asked in this assessment. Almost all young adults realized that the health of a pregnant woman has an effect on the health of her baby (98%) and that infants have a better chance of survival if the mother is well nourished during

pregnancy (97%). Eight out of 10 realized that birth defects are more common among children born of women near the end of their child-bearing years. However, 7% of the young adults did not believe this and 13% said they did not know. On two more technical questions that required some rudimentary knowledge of death rate statistics, knowledge was appreciably lower. Less than half (49%) of the young adults knew that the mortality rates for mothers in their teens was higher than if the mothers were in their twenties. Only 43% knew that the mortality rate of infants of mothers in their teens was higher than that of infants of mothers in their twenties. Between one-fourth and one-third of them simply stated that they did not know this information.

Young adults were also asked several questions about diseases that are spread by sexual contact. Almost all of them knew that they should let their sexual partner know if they suspect they have venereal disease (97%), that they should abstain from sexual activity until treated (97%) and that they should receive treatment by a doctor or clinic (98%).

Six questions were asked about gonorrhea. Approximately 9 out of 10 adults knew that once a person is treated for gonorrhea, he or she is not immune from contracting it again (90%); that gonorrhea can do physical harm (90%); that a person should not try a home remedy for gonorrhea before going to the doctor (94%); and that the sexual partner of a person with gonorrhea should see a doctor as well (92%). Eleven percent of the young adults incorrectly assumed that a person always knows if he or she has gonorrhea. Approximately 40% did not know that a condom is a generally effective safeguard against gonorrhea.

While almost nine-tenths (88%) of the young adults knew the basic symptom of pubic lice (itching in the pubic area), only two-thirds (66%) knew that pubic lice could be treated with a prescription shampoo. One person in 5 (18%) mistakenly thought that pubic lice could be contracted only through sexual intercourse with a carrier. However, 9 out of 10 knew that pubic lice infected both men *and* women. Almost half the young adults either thought that pubic lice could thrive in the hair on one's head (30%) or did not know (17%).

In another series of questions, aduits were asked to respond to several statements about rape.

Which of the following statements about rape are true and which are false?

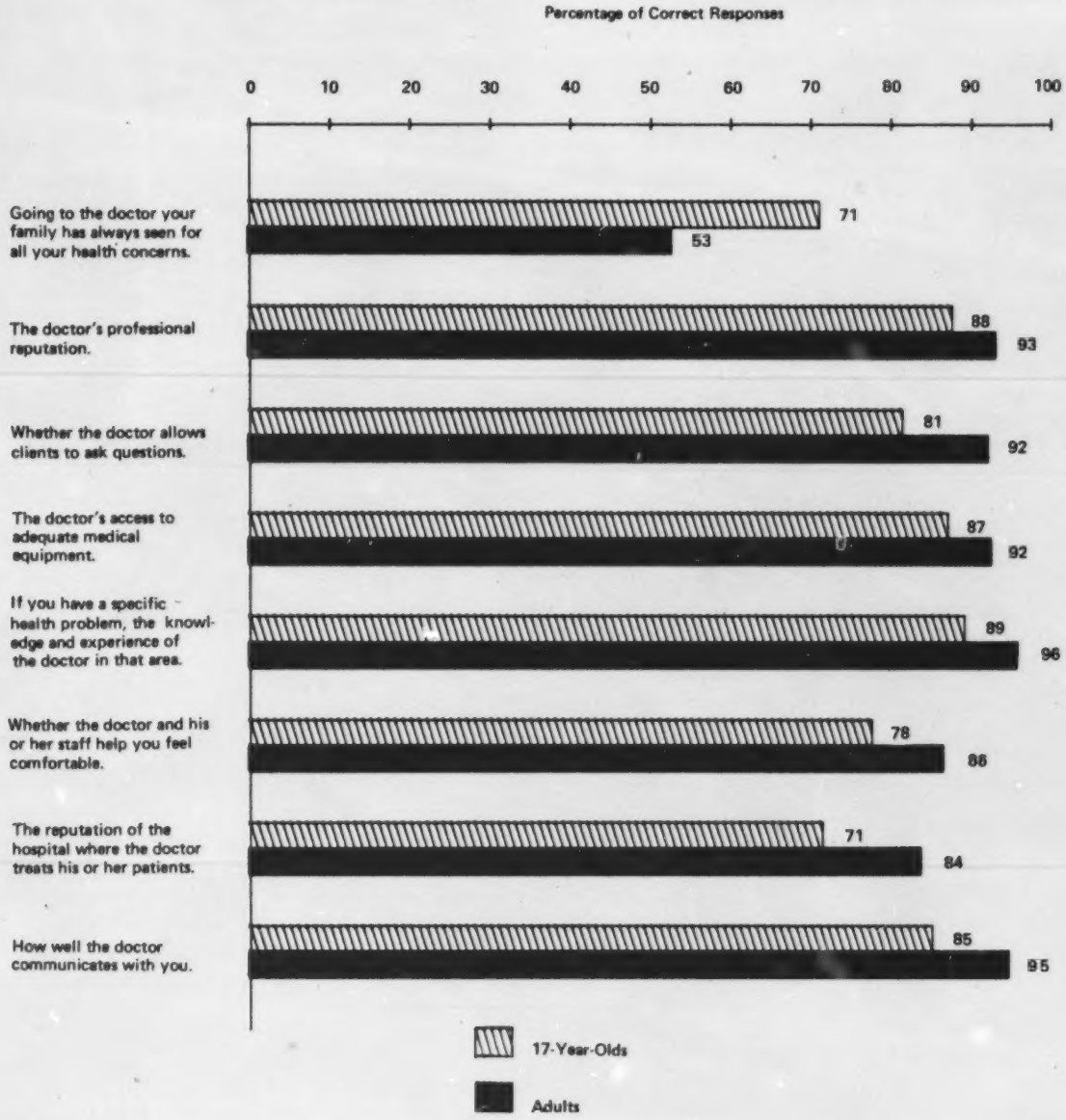
	True	False	I don't know.
A. Rape seldom causes serious physical or emotional damage to a woman.	8%	89%	3%
B. A rape victim has the right to file a legal complaint against her assailant.	97	1	2
C. A woman who is raped usually has provoked the attack in some way.	7	88	5
D. Rape can cause emotional upset even after an extended period of time.	95	3	2
E. A rape victim has the option of obtaining a medical examination to check for injuries, VD, or possible pregnancy.	91	4	5
F. A man who rapes a woman usually causes her extensive emotional problems.	87	5	7*

**Rows might not total 100% due to rounding.*

Almost all (97%) young adults knew that a rape victim has the right to file a legal complaint against his or her assailant. Nine out of 10 (91%) knew that a rape victim has the option of obtaining a medical examination to check for possible injuries, venereal disease or pregnancy. Although 88% of the young adults nationally did not think a woman who is raped usually provokes the attack, a sizeable minority of men (18%) either believed that women do provoke attacks (10%) or said they did not know (8%). Among young adult women, 5% believed women provoke attacks, and 3% said they did not know.

Three statements related to the emotional consequences of rape. Ninety-five percent of the young adults knew that rape could cause

EXHIBIT 16. Percentages of 17-Year-Olds and Young Adults Selecting Various Considerations That Would Affect Their Choice of a Doctor



emotional upset even after a long period of time. Approximately 9 out of 10 believed that rape causes serious physical or emotional damage to a woman (89%) and that a man who rapes a woman usually causes her extensive emotional problems (87%).

Health Care Services

The rising cost of medical care in this country is a serious health concern. In the years between 1965 and 1975, medical costs tripled. By 1975, medical costs in the United

States totaled $118.5 billion, or an average of $547 per person. There does not appear to be any relief from these rising costs for the immediate future. We all have a responsibility to keep informed about available services, to make wise decisions about selecting these services and to make sure we have adequate health insurance protection. National Assessment asked both 17-year-olds and young adults several questions related to these issues.

Seventeen-year-olds and young adults were asked a number of questions about the kinds of information that should or should not strongly affect their choice of a doctor. Eight questions related to information that *should* affect one's choice of a doctor. While the percentages of people who correctly identified important considerations were high at both ages, fewer teenagers seemed to be concerned with or have expectations about interpersonal communication with the doctor. A comparison of the percentages of 17-year-olds and young adults who felt each consideration should strongly affect their choice is found in Exhibit 16. In only one instance (going to the family doctor) did the percentage of 17-year-olds (71%) who felt strongly about the situation surpass the percentage of young adults (53%). Eighteen percentage points separated the groups on this issue.

While approximately 9 out of 10 respondents felt that the style of clothes a doctor wears or the way a doctor decorates the office should not strongly affect one's choice, a relatively large minority of both 17-year-olds and young adults (20% at age 17, 16% at young adult) felt that finding the least expensive doctor regardless of qualifications is important. Approximately 1 in 4 felt a friend's advice should strongly affect one's choice (23% at age 17, 26% at adult), while 70% of the adults and 69% of the teenagers did not think so.

Taking care of oneself emotionally is just as important as taking care of oneself physically. Knowing where to seek help for emotional problems is an important health skill. National Assessment asked 17-year-olds and young adults several questions about actions that might be helpful for a 16-year-old who was severely depressed.

Charles is a 16-year-old who frequently feels that the world is no good and there is little hope that things will improve. He is very depressed and his friends have not been able to help him feel better. In situations like this, people generally find that some actions are more helpful than others. Is each of the following actions likely to be helpful for someone in this situation?

	Age Level	Likely to be helpful	Not likely to be helpful	I don't know.
A. Seek help from a physician.	17*	41%	53%	4%
	Adults	77	20	3
B. Call a local mental health clinic.	17*	48	44	5
	Adults	86	11	3
C. Drop out of school.	17*	3	93	1
	Adults	2	97	1
D. Consult a school nurse, counselor, or social worker.	17*	79	15	3
	Adults	92	6	2
E. Wait for things to get better.	17*	30	63	4
	Adults	14	84	2
F. Talk with parent(s) about feelings.	17*	88	7	2
	Adults	94	3	2†

Approximately 3% of the 17-year-olds did not respond to this question.

†Rows might not total 100% due to rounding.

Although 84% of the young adults correctly identified at least five of the six possible actions to counter stress as either likely to be helpful or not, only 46% of the 17-year-olds did so. The difference between the adults' and the 17-year-olds' responses were most marked in two instances — seeking help from a physician and calling a local mental health clinic. Although 77% of the young adults thought that seeking help from a physician was likely to be helpful, at age 17 only 41% of the respondents thought so. Over half the 17-year-olds (53%) and 20% of the young adults did not feel a physician would be helpful. At age 17, 44% of the respondents also felt that calling a local mental health clinic would not be helpful.

On the other hand, approximately 8 out of 10 (79%) 17-year-olds thought that school

nurses, counselors and social workers would be helpful, and 88% considered talking over problems with parents helpful. Thirty percent of the 17-year-olds felt waiting for things to get better was a helpful action, while only 14% of the adults thought that waiting for the depression to end was a reasonable tactic.

Both 17-year-olds and young adults were also asked to respond to statements that involved common stereotypes of psychiatry and people who go to psychiatrists. Approximately 9 out of 10 respondents at each age knew that people who seek psychiatric help are not always mentally ill, that they may be no different than their friends and that they are not routinely placed in mental institutions. While over 90% of the 17-year-olds (94%) and young adults (96%) agreed that people who seek psychiatric help may be going through changes in their lives, only 58% of the young adults and 48% of the 17-year-olds agreed to a statement that people who seek psychiatric help usually have problems that involve other members of the family. Thirty-three percent of the adults and 40% of the 17-year-olds disagreed with the statement. Eight percent of the adults and 11% at age 17 said they did not know.

Seventeen-year-olds and young adults were also asked four questions about appropriate and inappropriate actions to take in order to get medicine at a lower price. Approximately 8 out of 10 in each age group (82% of the adults and 78% of the 17-year-olds) knew that it was appropriate to ask the doctor to prescribe an equally effective medicine that has a lower price per tablet. However, only two-thirds of the young adults (65%) and 35% of the 17-year-olds knew that it is appropriate to ask the doctor to prescribe the medicine by its generic or chemical name. The disparity between the percentages of correct responses on these two similar questions suggests that although many people do not know the meaning of the term generic, approximately 80% understand the concept. A surprisingly large number of respondents thought it would be appropriate to ask the druggist for a larger bottle of tablets. Twenty-nine percent of the 17-year-olds and 21% of the young adults did not realize that the druggist can legally dispense only the quantity of tablets that a doctor prescribes. Twenty-one percent of the 17-year-olds considered asking the druggist for a nonprescription medicine that is cheaper, as did 12% of the young adults. A large minority of both 17-year-olds and young adults believed druggists have wider options when dispensing medicines than they, in fact, have. They do not appear to know that the druggist is legally bound to fill the prescription as written, and that the doctor is the person with whom to discuss the choice and the quantity of drugs ordered.

Given the cost of medical services, health insurance can no longer be considered a luxury. A medical problem can quickly wipe out a family's savings and leave it deeply in debt . . . and no one is immune. National Assessment asked 17-year-olds and adults several questions that surveyed their concern for the necessity of having some kind of health insurance.

John is 20 years old, single, and has no health insurance. He has just been hired by a company and has the chance to get group health insurance. Which of the following statements are true and which are false?

	Age Level	True	False	I don't know.
A. He should save his money and sign up when he is older.	17*	7%	80%	7%
	Adults	3	95	1†
B. He should know exactly what the insurance policy covers.	17*	92	1	2
	Adults	98	1	1
C. He should wait until the company gets a cheaper plan that wouldn't cost him so much money.	17*	8	74	12
	Adults	3	95	3†
D. He should check to see if dental and eye care are included on policy benefits.	17*	85	4	5
	Adults	93	5	1†
E. He should not bother with health insurance because he is single.	17*	3	87	3
	Adults	2	98	0
F. He should compare the insurance plan offered by his employer with other insurance plans.	17*	85	3	5
	Adults	90	7	2†

Approximately 6% of the 17-year-olds did not respond to this question.

†Rows might not total 100% due to rounding.

Almost all of the young adults (between 95% and 98%) knew that it would be incorrect to save money and sign up for insurance later, wait for a cheaper plan and/or not bother with insurance because one is single. At age 17, the concern with health insurance was tempered by other economic concerns. Fourteen percent of the 17-year-olds thought that saving money is a good idea or said they did not know. Twenty percent did not know or thought waiting for a cheaper plan was reasonable. While economic concerns were evident for this age group, only a very small percent thought being single is a good rationale for not having insurance.

Three other questions dealt with consumer concerns as they related to health insurance. More than nine-tenths of both 17-year-olds (92%) and young adults (98%) thought one should know exactly what an insurance policy covers. Ninety-three percent of the young adults considered checking for dental- and eye-care benefits important, compared to 85% at age 17. Ninety percent of the young adults thought comparison of plans to be important, compared to 85% at age 17.

As might be expected, young adults are somewhat more concerned with health insurance issues than their 17-year-old counterparts. However, since the majority of 26- to 35-year-olds no doubt have directly experienced the high cost of medical services in the form of doctor and prescription bills, or hospital costs, the difference is not surprising.

CHAPTER 4

A PERSPECTIVE ON THE DATA

In order to put the health assessment into a broader perspective, National Assessment held a conference on June 15 and 16, 1978, to discuss the social and political implications of the findings. Four experts in the fields of health care services and health education participated in the discussions: Henry Cooper, M.D., associate professor of pediatrics and director of the adolescent clinic at the University of Colorado; Roy Davis, director of the Community Program Development Division, Bureau of Health Education, Center for Disease Control, Public Health Service; Leonard Syme, Ph.D., professor of epidemiology and chairman of the Department of Biomedical and Environmental Health Sciences, School of Public Health, University of California at Berkeley; and Janet Hanley Whitla, director, School and Society Program, Education Development Center, Newton, Massachusetts.

The wide range of interests and expertise of the conference participants was reflected in the topics they discussed. During the course of these discussions, several broad areas of concern surfaced over and over again. These concerns centered on how the public would interpret the findings, where the responsibility for health education should lie and how change could best be effected in the area of health education.

There was some concern among the conference participants that the assessment's findings caused the situation in health education to look better than it really is, and that the data might be used to maintain the status quo. While the participants felt that knowledge is necessary and important and were pleased by the apparent high levels of knowledge on many items, they pointed out that the report provides very little information about actual behaviors and therefore is an incomplete picture. Roy Davis summed up the concern of the group in this way:

> I have a nagging feeling that the data look much better than the situation really is. This is probably due to the fact that the report deals with facts and knowledge. These results are no doubt accurate and reflect a certain level of achievement; nevertheless, they do not get at behaviors. We need the kind of information found in the NAEP report, but I am concerned that policy makers will look at these data from a narrow perspective, say, "We've done a good job," and neglect the real issues. Having worked in the field of health education for 20 years, I don't know of anyone who believes our efforts have even come close to what needs to be done.

Henry Cooper concurred, but stressed another side of the issue. He felt the data also reflect some significant gaps in knowledge, and, while the overall results appear favorable, the areas in which information is lacking are significant and should not be forgotten.

> Although the data paint a favorable picture overall, there is a consistent difference between the performance of 17-year-olds and young adults. This difference suggests that a large part of health education may not be occurring in the schools. Furthermore, the percentages of 17-year-olds and young adults who had basic knowledge about emergency care skills, alcohol and drugs, or

contraception are not particularly high. These areas are among the most critical in terms of health care. Perhaps more emphasis needs to be put into these areas.

Janet Whitla picked up on Dr. Cooper's remarks and hypothesized about the "gaps" in knowledge that were reflected in the data.

What struck me about this report were the differences that exist between various types of knowledge. People appear to have the most factual knowledge in those areas where society has indicated it is most permissible. However, these areas may not always be the most crucial for the individual's well-being. People know a lot about calories and foods, but it probably has more to do with looking good than feeling good. The culture is pervaded with information about looking good. There is nothing controversial about it. However, when we start looking at issues such as human biology, there is suddenly a great deal of disagreement about the information to which people should have access. The issue becomes very complicated. We can't agree as a nation what should be taught in this critical area. I would venture to say that the gaps in knowledge that we observe here are really gaps in society's willingness or readiness to confront these issues. In another way, the same thing applies to the gaps in knowledge about emergency care. People aren't motivated to know these things. Learning how to deal with emergencies and accidents implies accepting their reality.

Henry Cooper elaborated on the cultural aspects of acceptable knowledge and the resistance to culturally different standards among various groups of people.

We know that groups have very different levels of acceptance for specific knowledges. For example, look at the ethnic differences that surround eating habits and nutrition. We can teach people some facts about nutrition in school, but when they return to their ethnic community this may be counter to standards that have been accepted for centuries. The kid comes home and tells mom that fried foods aren't very healthy. Mom looks at the kid and says, "I don't care what the teacher says, we've eaten this way all our lives and there's nothing wrong with any of us." It's a terribly complex problem when we begin to infringe on subcultural values. Knowing how to go about it is a real challenge.

Leonard Syme captured the group's concerns about the findings by putting health education into the broader perspective of life style concerns.

All the discussion in the world about knowledge people should or should not have inevitably brings us back to the central issue of health. Is what we are doing making any difference in the way people behave? Knowledge divorced from actual life experiences is not very useful. I perceive all the major health problems of our time as life style problems. The only way to get these problems under control from a prevention or even management perspective is to change the way people behave. The statistics concerning behavior change indicate that we have not done a very good job. We need to get people to live differently if we are going to influence their health. The questions in the NAEP study clearly reflect the basic problem. Almost all of the young adults and 17-year-olds "know" that smoking is not conducive to good health; nevertheless, statistics show an increase in smoking within these age groups.

With Dr. Syme's comments, the discussion turned to the issue of how to influence behavior change. At the heart of the discussion was the role that schools can and should play in the process of health education.

Although there were varying opinions about the extent of the role that schools should play, there was general agreement that schools had to play a central part in the process of health education in this country. Dr. Cooper summed up the group's feelings in this way:

> Although we all agree the school cannot be the sole repository of health education, we know its role is crucial and cannot be eliminated. School is one of the few places where kids are a "captured audience" — the home is the other. The schools are there — the institution is in place, and it must be utilized effectively.

Janet Whitla expanded on this viewpoint based on her experiences implementing health education programs throughout the country.

> Schools can only play a limited role. We need to involve parents in the issues that their children are being asked to address. In my work involving programs for teenagers, we have come full circle. We started with an emphasis on students and ended up realizing that we needed to begin with the parents. We now run seminars for parents and community members before we introduce programs for students in a school district.

Roy Davis stressed the fact that school health programs are often blamed for health education failures when they have not really been given an adequate chance.

> Whenever I try to characterize what school health programs are like, I end up realizing they have rarely existed in a planned, organized or sequential way. The fact of the matter is that while most states have a prescribed health curriculum, teachers have been inadequately prepared to teach, and money for essential materials and resources has not been allocated. Health education has always been relegated to a second-class position within the schools. Sequential, well-planned health education programs are rare.

Leonard Syme played the devil's advocate during this discussion in order to draw out the other participants.

> Shouldn't we be teaching issues when they are relevant? Shouldn't health education be education for living and not a prescribed K—12 curriculum that deals with sets of discrete topics and facts?

The other members of the group concurred fully with the viewpoint that health education must be relevant, but pointed out the dangers of not having a planned program. Roy Davis spoke out against developing health education programs that are exclusively school-centered. He felt that programs implemented only in schools reflect too narrow a view of the problem, and need to be restructured so that they involve the entire community.

> Learning is a complicated process that requires a great deal of interpersonal interaction, resources, knowledge of cultural norms and student motivation. These things do not come together without a well-thought-out plan. When you have a good curriculum you can tell the teacher, the school board, the parents and the students exactly what will happen . . . and if you do it well, those things will happen.

Janet Whitla suggested that there was hope and that school programs could be effectively linked to the community. Her experiences have shown that by working with community people rather than on them, successes are possible.

> Although you may never move people all the way toward what you value or consider important, their values are also important and must be respected. When programs take this perspective, people do change and grow.

Based on the discussion of the school's role, the group explored just how society can effect behavior changes. The group pointed to the fact that the data indicate that experience is a great teacher. Roy Davis said that school programs have reflected too much fact-giving and not enough experiential learning.

> Experiential learning in health is just beginning to get the attention it deserves. We've relied too heavily on factual knowledge, but things are changing. Furthermore, we've never had a strategy for getting total health programs into the community through the schools. Until we do this on a large scale, health education in the schools will always be of limited effectiveness.

Leonard Syme commented:

> People tend to learn about things when they need to know them. For example, the young adults know more about child development than 17-year-olds. Since they more than likely are having the experience of dealing with their own children, it makes a great deal of sense. It is very difficult to tailor our behavior to long-term goals — it's beyond the ability of most of us. We need to spend more time teaching people about those things that affect them now. We spend too much time worrying about the long-term consequences of things.

Henry Cooper pointed to a recent experience related to the issue:

> I had the occasion recently to watch a group of teenagers taking a life-saving course. They all were working very hard at it. As I watched them, I realized that what they were doing had very little to do with saving lives — but it had a great deal to do with performing well among their peers. I really doubt that any of those kids thought that one day they'd use these skills to save someone from drowning. Nevertheless, they will end up with the ability to do so.

Leonard Syme commented:

> The message is clear. If you want to change behavior, peer influence is a key way. We need to learn to take advantage of it. It is the motivating factor. I didn't learn CPR until I was in a class with a group of colleagues and didn't want to look incompetent with "resusi-Annie." I learned very quickly at that point.

Roy Davis remarked:

> We have everything going for us with kids. They are unbelievably interested in their bodies and how they work. They can become engrossed with their bodies and general health, yet they have virtually no opportunities to learn about their concerns in this area.

The consensus was that new models for health education need to be developed and tested.

Leonard Syme pointed out that for a start, the medical profession needs to reevaluate the role it plays.

> The major medical centers in this country have to begin admitting that they are limited and cannot deal with all aspects of health. They need help. At the present time these institutions are still promoting the belief that they are the main repositories of "health knowledge." Groups outside of these centers do not have credibility or respectability. The medical profession must take the leadership in challenging its own image of perfection. We don't need more technology. We need to begin to help people become responsible for their own health and to take advantage of what is available.

Roy Davis reiterated his belief that schools are a natural place to begin the process.

> We need school models that show how people can cooperate to reach common

goals. Schools are set up to do what communities want. Health groups such as lung associations, cancer societies and heart associations need to unify their goals and lobby for programs. Parents need to be actively educated to participate in decisions about health education. We need to develop a wide variety of models that people can observe in action. Policy makers need to begin to support these efforts and turn their attention in this direction.

Speaking to the issue of policy, Janet Whitla talked about the "catch-22" nature of funding.

There appears to be a great deal of resistance to putting money into active developmental projects, because there are no "hard data" to support their effectiveness. However, since programs are never given a chance to show results, we never have the hard data necessary to get more funds. The emphasis in health is to put the big money into basic research because it's politically safe. No one funds programs that put health into the context of healthy living or attempt to change health behavior patterns. When health education gets funded, it tends to be traditional programs.

Roy Davis bolstered the argument using the National Assessment health report as an example.

This report is a prime example of the priorities in education and the status of health in the educational system. We desperately need the kind of information that NAEP has provided. Yet this is one of the few studies of its kind — and it was carried out on a shoestring budget. As more monies are allocated to health education — and more are being allocated these days — studies like this become a crucial bridge, supplying data about strengths, weaknesses and areas that need emphasis. This study should be expanded to provide health decision makers with the kinds of facts they need to be sure monies are allocated in those areas where they are most critical.

Leonard Syme added:

At the present time, our knowledge about what should be done for people in high-risk groups is very limited. In terms of cost effectiveness alone, we need to know where the money and services should be targeted. While this report provides us with an inkling of those areas that should be targeted for special attention, the level of detail is not sufficient to make major decisions. I would hope that in the future national-level reports such as this will have adequate funding to provide that kind of information.

At the end of the conference, Janet Whitla summed up the feelings of the participants:

In this country with all its diversity, nothing is ever *the* solution to all the problems — no study, no curriculum, no policy decision will ever capture all of our needs. The National Assessment health assessment calls attention to one part of a very complex problem — we need many ways to get at the same end. I would hope that in the future, many more studies would be funded and many new programs initiated. We need a great deal of experimentation and a great deal more information. This report is but a step in the right direction.

APPENDIX A

CONSULTANTS WHO PARTICIPATED IN THE DEVELOPMENT OF THE HEALTH ASSESSMENT

Sally Allen, researcher, Council for Real Education, Denver, Colorado.

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APPENDIX B

INDEX OF HEALTH QUESTIONS FOUND IN THE REPORT

This list provides a complete index of the questions discussed in this report. They are given in sequential order, by topic, beginning with Chapter 2. Each listing contains a short description of the content of the question, the NAEP item number and the ages at which the item was administered.

Description of Questions	NAEP Number	Administration Ages
Accident Prevention		
Accidents leading cause of death	201033J	17—A
Motor vehicles cause half of accidental deaths	201034E	17—A
Excessive speed leads to accidents	201033B	17—A
List emergency phone numbers	201007E	17—A
Check electrical wires	201007A	17—A
Dry hands when handling electrical wires	201007G	17—A
Wear seat belts	201033I	17—A
Never swim alone	201034B	17—A
Signal intentions	201034G	17—A
Ventilation in garage	201034D	17—A
Ventilation when cleaning with ammonia	201007C	17—A
Ventilation with gas space heater	201007D	17—A
Lifting heavy objects	201024A—D	17—A
Agent for putting out grease fire	201045	17—A
Emergency Care Skills		
Do not move accident victim	201034I	17—A
Cover victim exposed to cold	201034K	17—A
Check emergency identification	201034H	17—A
Lack of apparent injury	201034C	17—A
Do not give victim drink	201033L	17—A
Pressure points	201044A—B	17—A
Use of tourniquet	201033A	17—A
Blood soaks through pad	201033H	17—A
Elevate bleeding limb	201034J	17—A
Lack of oxygen	201033K	17—A
Removing foreign matter from mouth	201033M	17—A
Chest-pressure arm-lift technique	201034L	17—A

Description of Questions	NAEP Number	Administration Ages
Mouth-to-mouth technique	201043A	17—A
Mouth-to-nose technique	201043B	17—A
Ointments are effective way to treat burns	201033C	17—A
Best treatment for minor burns	201025	17
Cold water effective to treat burns	201034F	17—A
Bread not effective to stop choking	201034A	17—A
Slap on the back not effective to stop choking	201033G	17—A
Animal bite requires medical attention	201033D	17—A
Tweezers should not be used in eye	201033E	17—A
Inducing vomiting for poisoning	201033F	17—A
Drug overdose	201028A—E	17—A
Nutrition		
Nourishment during pregnancy	503018	A
Water critical for survival	201047	17—A
Carbohydrates for energy	502007	17—A
Most nutritious breakfast	501016A	17—A
Most nutritious snack	501016B	17—A
Weight reduction	201048	17—A
Foods with fewer calories	501021A—G	17—A
Considerations of a healthy diet	201012A—H	17—A
Cigarettes, Alcohol and Drugs		
Connection between cigarette smoking and health	201030	17
Statements about cigarette smoking	201039A—F	17—A
Effects of alcohol	201011	17—A
Abuse of "speed"	201005A—F	17
Diseases and Disorders		
Normal development times for a child	503009A—H	17—A
Normal and abnormal changes	201019A—H	17
Causes and care of acne	201032A—D	17
The common cold	202006A—E	A
Coughs	202010A—E	A
Diarrhea	202009A—E	17—A
Strep infection	202007A—G	17—A
Borrowing diet pills	201049A—D	A
Overweight boy	201048A—D	A
Overweight boy	201035A—C,E	17
Pap smear	201003A—G	A
Breast cancer	201050A—D	A
When to seek medical help	202001A—P	17—A
Need for eye examination	201002A—D	17
Earache associated with cold requires medical help	202006D	A
Cough with wheezing suggests seeing medical doctor	202010D	A

Description of Questions	NAEP Number	Administration Ages
Strep throat requires medical doctor	202007D	17—A
Blood in stool requires medical attention	202009E	17—A
Seek medical help for blood in bowel movement	202001N	17—A
Hormonal imbalance should be checked	201035D	17
Hormonal imbalance should be checked	201048C	A
Venereal disease requires treatment	201009B	A
No home remedy for gonorrhea	202004D	A
Medical diagnosis for gonorrhea	202004E	A
Reading and interpreting a thermometer	706001A—B	17—A
Human Sexuality		
Methods of birth control	503021A—R	A
Conditions for conception	503005A—E	A
Services of family planning clinics	503013A—D	A
Prenatal health of mother and child	503018A—E	A
What to do in case of suspected venereal disease	201009A—C	A
Gonorrhea	202004A—E	A
Condom and gonorrhea	503021M	A
Pubic lice	201041A—E	A
Rape	200002A—F	A
Health Care Services		
Choosing a doctor	202005A—L	17—A
Depressed young man	201037A—F	17—A
Stereotypes about psychiatry	201023A—F	17—A
Obtaining medicine	102015A—D	17—A
Health insurance	202002A—F	17—A

APPENDIX C

SELECTED CHARACTERISTICS OF THE ADULT SAMPLE

TABLE C-1. Percentages of Adults Responding That They Had Some Health Training or Health-Related Job Experience Beyond High School

	Percentage of National Sample*
Health training beyond high school	
Some	18.9
None	81.2
	100.1
Health-related job experience beyond high school	
Yes	17.3
No	78.6
I don't know	4.2
	100.1

**Columns do not total 100% due to rounding.*

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SCIENCE

1st Assessment (1969-70)

Report 1	*Science: National Results,* July 1970	2.15
Report 4	*Science.* Results by sex, region and size of community, April 1971	1.00
Report 7	*Science.* Results by race, parental education, size and type of community; also balanced results for all groups, May 1973	2.70

2nd Assessment (1972-73)

04-S-01	*Selected Results From the National Assessments of Science: Energy Questions,* May 1975	1.45
04-S-02	*Selected Results From the National Assessments of Science: Scientific Principles and Procedures,* August 1975	3.00
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04-S-00	*National Assessments of Science, 1969 and 1973: A Capsule Description of Changes in Science Achievement,* February 1975	1.00
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04-S-20	*Changes in Science Performance, 1969-73: Exercise Volume, Appendix* (2 vols.), April 1977	25.00
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08-S-00	*Three National Assessments of Science: Changes in Achievement, 1969–77,* June 1978	2.40
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